DOCUMENT RESUME

ED 122 095 CE 007 011

TITLE	Study of Residential Vocational Technical Center(s) in Maryland: Part II. Final Report.
INSTITUTION	McManis Associates, Inc., Washington, D.C.
SPONS AGENCY	Maryland State Advisory Council on Vocational-Technical Education, Baltimore.
PUB DATE	May 75
NOTE	105p.
EDRS PRICE	MF-$0.83 HC-$6.01 Plus Postage.
DESCRIPTORS	*Community Colleges; Cost Effectiveness; Educational Finance; Employment Trends; Needs Assessment; Post Secondary Education; Private Colleges; Program Administration; Program Planning; Questionnaires; *Residential Centers; State Surveys; *Statewide Planning; *Technical Education; *Vocational Education; Vocational Training Centers
IDENTIFIERS	*Maryland

ABSTRACT

Part 1 of the project aimed at determining unmet vocational-technical education needs in the State of Maryland which might be met through residential education; Part 2 was designed to study the possible alternatives for meeting the needs discovered and to make recommendations regarding how these could best be met. A summary of Part 1 of the project is included in the report. The recommendations growing out of Part 2 focus on creating three residential vocational technical centers on existing community college campuses and assigning State and regional programs to these centers. The report delineates the recommended programs and the colleges to which they should be assigned, makes recommendations regarding residence halls, funding, and control, and includes a cost-benefit analysis. Additional recommendations relate to local councils or advisory groups, program publicity, counseling, professional associations, interstate compacts, and further studies. Appended are a copy of the questionnaire sent to private vocational technical schools, the results of the questionnaire, a copy of the needs-assessment memorandum sent to industrial and scientific firms in Maryland, results of the memorandum, communications relevant to the study, and a list of possible sources of Federal funds for various aspects of the residential programs. (AJ)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED122096

FEB 25 1976

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

STUDY OF RESIDENTIAL VOCATIONAL TECHNICAL CENTER(S) IN MARYLAND

PART II. FINAL REPORT

MAY 1975

CE00?0114

TABLE OF CONTENTS

CHAPTER		PAGE NO.
	EXECUTIVE SUMMARY	i
I.	INTRODUCTION TO PART II	
	A. Introduction	1
	B. Executive Summary - Part I	1
	C. Introductory Summary to Part II	1
II.	OBJECTIVES OF THE STUDY	4
III.	METHODS AND LIMITATIONS	
	A. Methods	6
	B. Limitations	7
IV.	FINDINGS AND RECOMMENDATIONS	
	A. Introduction	9
	B. Structure of Post High School Vocational Technical Education	9
	C. Residential Community Colleges and the Role of the State Board for Community Colleges	11
	D. Structure of Residential Community Colleges	14
	E. Students to be Served	20
	F. Programs to be Offered	23
	G. Facilities, Costs, and Funding for Programs	28
V.	COST-BENEFIT ANALYSIS	35

TABLE OF CONTENTS, Continued

CHAPTER		PAGE NO.
VI.	ADDITIONAL RECOMMENDATIONS	
	A. Local Councils or Advisory Groups on Vocational Technical Education	37
	B. Publicizing Vocational Technical Programs	37
	C. Educational Vocational Counseling	37
	D. Relationship of SBCC and MACVTE	38
	E. Further Studies	38
	F. Interstate Compacts for Vocational Technical Education	39
VII.	PLAN OF ACTION	40
VIII.	SUMMARY AND CONCLUSIONS	42

APPENDIX

A.	Questionnaire to Private Vocational Technical Schools
B.	Results of Questionnaire to Private Vocational Technical Schools
C.	Memorandum to 1,088 Industrial and Scientific Firms in Maryland
D.	Results of Memorandum to Industrial and Scientific Firms in Maryland
E.	Letter from Maryland Department of Employment and Social Services Listing Job Bank Openings Listed for 100 Days or More
F.	Letter to Community College Presidents
G.	Possible Sources of Federal Funds for Various Aspects of the Residential Vocational Technical Facilities and Programs

EXECUTIVE SUMMARY – PART II

McManis Associates, Inc. has had the privilege of conducting this study of residential vocational technical education in the State of Maryland for the Maryland Advisory Council on Vocational-Technical Education.

Part I of the study aimed at determining whether there were unmet vocational technical education needs in the State which might be met through residential education. It was concluded that there were such needs and that they might be met through a residential center(s). The executive summary from Part I of this study is found in *Exhibit I-A*, Page 1 of this report.

Part II of this project was designed to study the possible alternatives for meeting the needs discovered in Part I and to make recommendations regarding how these could best be met.

In short, the recommendations growing out of Part II focused on creating three residential vocational technical centers on existing community college campuses and assigning State and regional programs to these centers. The study delineated the recommended programs, the colleges to which they should be assigned, made recommendations regarding residence halls, funding and control and included a cost benefit analysis.

The specific recommendations made in Part II of the study were as follows:

1. *That the post high school vocational technical education needs be met through the currently existing community college system.*

2. *That three community colleges be designated as residential centers (Allegany, Howard, and one on the Eastern Shore to be named later).*

3. *That the State Board for Community Colleges (SBCC) be given authority to (1) designate regional and state programs qualifying them for full state funding and opening them to all state students at the in-district tuition rate (except for students whose county community college already has such a program), (2) contract for special programs with private schools where this would be more efficient and effective for the state, and (3) fund residence halls with state funds, if necessary, at the three community colleges approved for them.*

4. *That the SBCC study the situation on the Eastern Shore in six to twelve months and designate one of the colleges as the residential center for*

that area. If the situation remains unchanged, the consultants recommend the designation of Chesapeake Community College.

5. *That the administration of the three residential vocational technical centers be left to the local board currently responsible for the colleges.*

6. *That each college develop or affiliate with an existing assessment center to provide the necessary testing and evaluation to properly place students (including handicapped) in appropriate programs.*

7. *That the three colleges make special provisions for serving handicapped students who qualify to take their programs and that new and existing facilities make full provisions for handicapped students.*

8. *That the state and regional programs be studied carefully so that as many as possible may be developed as cooperative programs.*

9. *Where apprenticeship programs exist, that every attempt be made to coordinate with the appropriate officials so that a maximum amount of credit can be granted toward the apprenticeship.*

10. *That local advisory groups be established for each college to interface with local business, industry, government, and educational agencies in order to insure a flow of information and maximum cooperation.*

11. *That all community colleges be required to list in their catalogs all vocational technical programs that they do not offer along with details on how students can secure further information on them.*

12. *That residence halls be of the apartment type, modest in design, and funded from private sources if possible, and that costs to the students be kept as low as possible.*

13. *That the three residential colleges be required to provide adequate placement, counseling, and housing services to properly serve the residential students.*

14. *That the SBCC and local colleges investigate several federal funding possibilities in order to reduce costs to the state and local district for facilities and operating costs (see Appendix G).*

15. *That approximately forty new programs be started or expanded over the next ten years in the residential colleges.*

16. *That the colleges serve an age group of roughly 17 to 65 allowing exceptional high school students to enter programs if they are qualified to do so and can pass proper assessment exams.*

17. *That the SBCC contract with private and proprietary schools for some vocational technical programs if this is found by proper study to be more effective and economical than starting a new program in a community college.*

18. *That the MACVTE and the SBCC provide for regular closer working relations and schedule at least one joint meeting annually.*

19. *That future studies be aimed at assessing the high school level need for residential vocational technical education and the needs for such education at the four-year degree level and above.*

20. *That the state designate one state agency as being responsible for developing and providing relevant manpower information and that such an agency be staffed and funded to do an adequate job.*

21. *That the State of Maryland develop interstate compacts with Pennsylvania, West Virginia, Delaware, Virginia and the District of Columbia providing for the reciprocity of students in post high school vocational technical programs.*

McManis Associates, Inc. believes that implementation of the above recommendations would be the most efficient as well as the most effective way for the State of Maryland to meet its unmet vocational technical education needs.

I. INTRODUCTION TO PART II

A. INTRODUCTION

The following study is the second of a two-part study on residential vocational technical education in Maryland. McManis Associates, Inc., has had the privilege of carrying out the study for the Maryland Advisory Council for Vocational-Technical Education (MACVTE).

Part I of this study was a needs assessment designed to determine if there were unmet vocational technical education needs which might be satisfied through the establishment of one or more residential vocational technical education centers. The study also attempted to determine if such centers, when established, could be economically justified.

B. EXECUTIVE SUMMARY – PART I

Following is *Exhibit I-A*, the Executive Summary of Part I of this study. Further information and data supporting the conclusions of this summary may be found by referring to Part I, which can be secured from the Maryland Advisory Council for Vocational-Technical Education, 48 Randall Street, Annapolis, Maryland 21401.

C. INTRODUCTORY SUMMARY TO PART II

The purposes of Part II of this project were (1) to conduct a study of the possible solutions to the unmet needs for vocational technical education in Maryland as outlined in Part I of our study and (2) to discover how the establishment of one or more vocational technical centers could meet these needs. A more specific delineation of the objectives of Part II is found in Chapter II.

Before proceeding the consultants believe one major point needs to be clarified. This report, recommends the expansion of educational facilities and programs, and the disbursement of considerable portions of state funds for higher education. Some may question the recommendations because of well-publicized reports on declining birth rates, declining college enrollment and empty spaces in colleges across the country. These facts are misleading and obscure significant facts which are relevant to this study.

First, while enrollments in four-year colleges and universities have leveled off and even declined in some areas, enrollments in public community colleges have continued to increase. Over the last two years community college enrollments have increased

EXECUTIVE SUMMARY – PART I

The following is a brief Executive Summary of the first of a two-part study carried out by McManis Associates, Inc., for the MACVTE. Part I deals with the assessment of unmet vocational technical education needs in Maryland as they relate to the possible establishment of one or more residential vocational technical education centers.

The consultants sent questionnaires to high school and rehabilitation counselors, interviewed educational, business, labor, industrial and vocational technical education leaders, visited model vocational technical residential institutions, and perused materials available from a variety of sources in gathering data for this study.

As a result of analyzing the data the consultants have concluded the following:

1. *There are unmet vocational technical educational needs in the State of Maryland at both the high school and post high school levels.*

2. *There are vocational technical education needs which the handicapped in Maryland have which could in part be served by a residential vocational technical center.*

3. *It is more economical and equitable for the state to place "one of a kind" programs in one or two state institutions and bring students to the programs than to try to locate low enrollment type programs within commuting distance of prospective students.*

4. *The state needs a post high school institution which will have as its primary function to meet the state's vocational technical employment needs. At present the state does not have such an institution.*

5. *A residential vocational technical center(s) could be financed in part from federal and private sources and would be an economical investment for the state. Graduates would more than repay the costs of their education in the increased taxes they would pay due to their obtaining better jobs and earning increased incomes.*

6. *Because of the lack of a charge back law many vocational technical programs are not now available to state students on an equitable basis. A state residential vocational technical center would help relieve this inequity.*

7. *Every group contacted in this study (except community college presidents) endorsed the idea of starting a residential vocational technical center(s). Some community college presidents endorsed the idea if it could be achieved by converting one or more community colleges to a residential center.*

8. *The state now does not provide vocational technical students with an "away from home" college experience as is readily available to four-year college graduates. Consequently some students who should go into vocational technical programs now go into four-year college programs in order to have a "college experience." A residential vocational technical college would fill this void.*

For the above reasons the consultants believe Maryland should seriously consider establishing one or more vocational technical center(s) and it is, therefore, recommended that the MACVTE proceed with Part II of this study.

24.4%. These were the largest enrollment gains in all of higher education.[1] Second, enrollments in vocational technical education programs have increased more than any other aspect of higher education. The result is that the overall percentage of growth in these programs has surpassed the percent of enrollment increase in community colleges.

The rapid shift of enrollment patterns away from traditional four-year and liberal arts programs to practical vocational technical programs has been noted by a number of educational leaders. The vocational technical programs are attractive for several reasons. One basic reason seems outstanding, i.e., that students who complete the programs are more likely to find well paying jobs than students who complete four-year programs and find a job market that does not offer them comparable opportunities.

Exhibit I-B illustrates rather dramatically what is occurring in the labor market in our society and why some adjustments must be made. The exhibit shows that the number of students continuing on to post secondary institutions (primarily to four-year colleges) vastly outstrips the number of professional, managerial, and paraprofessional jobs available. *Exhibit I-C* relates this problem directly to Maryland. In effect, what has happened in Maryland and across the country is that we have created a higher education system that is seriously out of balance with the occupational world. This means that we need to expand vocational technical training opportunities while holding constant, reducing or converting the traditional programs in four-year colleges and universities.

As mentioned earlier, students are beginning to realize these difficulties and are "voting with their feet" for programs that offer job opportunities. This will continue. The imbalance in higher education, however, must be recognized and dealt with. This study makes some recommendations that are intended to help solve this problem in Maryland. It is important to acknowledge the imbalance discussed above in order to understand why anyone would recommend increased educational opportunities when enrollments have been leveling off or diminishing.

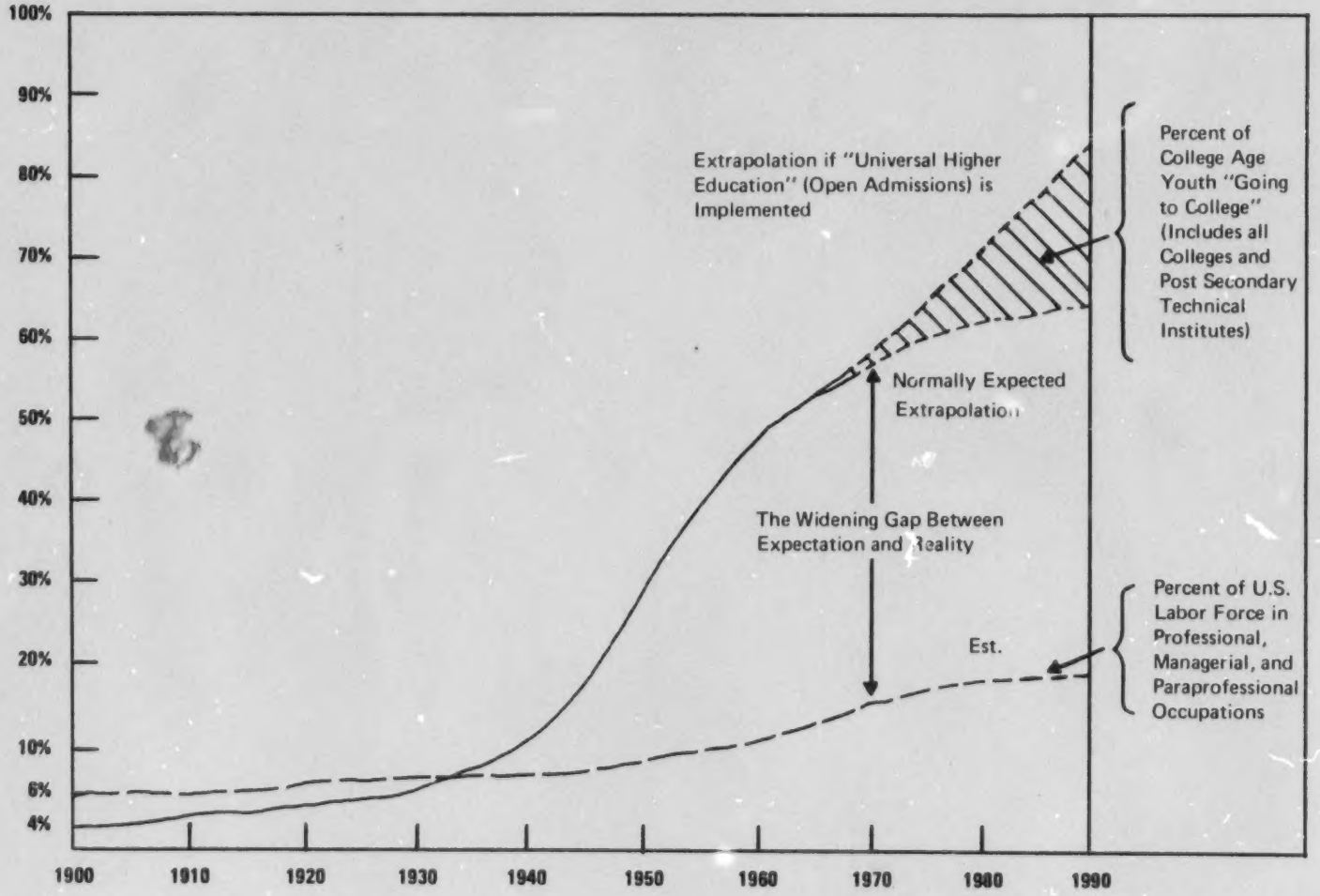
One additional point needs to be made before going on to Chapter II. The consultants found some unmet needs relating to vocational technical education at the high school level in Part I. Upon closer view in Part II these needs were less urgent than had previously been assumed. The new system of area vocational technical high schools is still developing, and some are yet to be built. The consultants believe at this time that no recommendations should be made regarding residential vocational technical high schools. Some high school students can and should be served by the residential vocational technical colleges as recommended later in this report.

---

[1] **Community and Junior College Journal**, Vol. 45, No. 8, May, 1975. P. 51.

HIGHER EDUCATION AND HIGH-TALENT MANPOWER

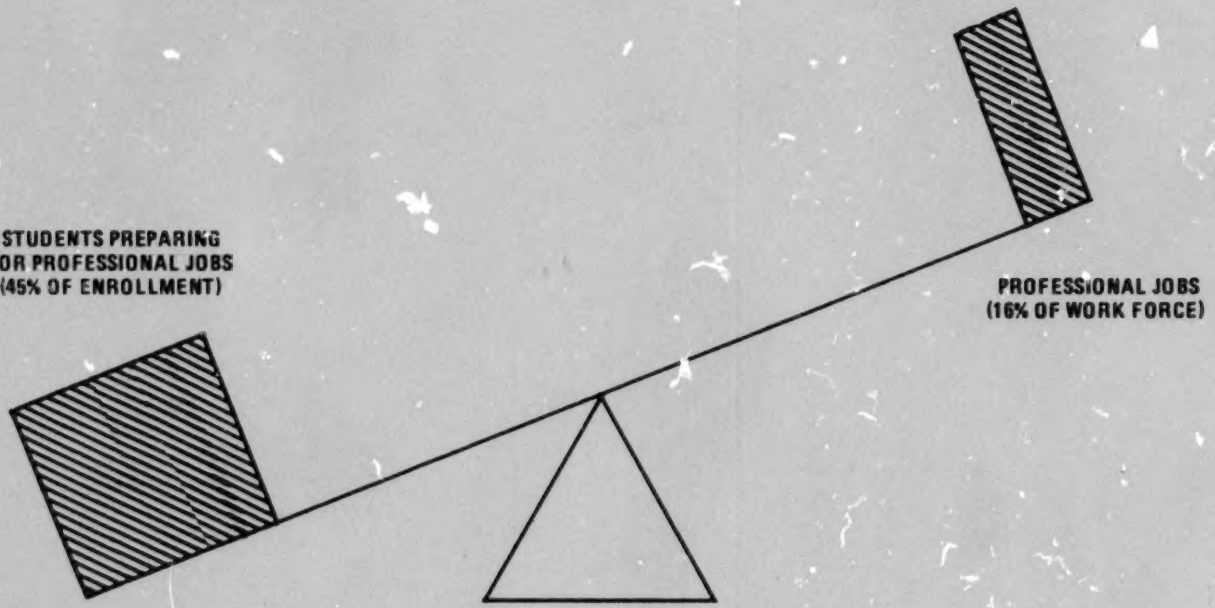
COMPARISON OF COLLEGE-GOING TRENDS WITH GROWTH IN PROFESSIONAL OCCUPATIONS
UNITED STATES 1900 – 1990



(Table developed by Dr. Norman Harris, University of Michigan.)

Exhibit I-B

A comparison of the existing enrollment structure in Maryland's school system with projected work force structure for 1980 shows a serious misalignment. If we are indeed to prepare today's youth for tomorrow's jobs, a major realignment of the education system must occur.



(Source: "Preparing Toda,'s Youth for Tomorrow's Jobs," Fourth Annual Report of the Maryland Advisory Council on Vocational Technical Education, 1973, p. 3.)

Exhibit I-C

The consultants recommend that a special study be instituted in approximately three years to focus on this area. At that time, the area vocational technical schools should be more fully operational and the situation more predictable than is currently the case.

Chapter II deals with the objectives of Part II of this study.

II. OBJECTIVES OF THE STUDY

Having carried out Part I of this study and having identified some unmet vocational technical education needs, the consultants proceeded with Part II. The objectives of Part II of the study were as follows:

- ***To study and determine the number and type of residential vocational technical centers needed.***

  Under this objective, the consultants reviewed the unmet needs and determined the number of centers needed and the best locations for them in order to best serve the people of Maryland.

- ***To study and recommend programs and curricula for the new institution(s).***

  Fulfilling this objective led the consultants to make an intensive study of program needs in order to make specific recommendations as to what programs should be offered, when they should be started and where they should be located.

- ***To determine the age level, skill levels, and nature of the student body and make recommendations regarding these elements, including resultant enrollment projections.***

  In meeting this objective, McManis Associates, Inc., studied the age level of students to be served, the skill levels to be included and the areas from which students would likely come. This was all taken into account when making projections of possible enrollments for the institutions.

- ***To make recommendations regarding the organization and management of the new institution(s).***

  In carrying out this objective, a study was made of the best way to fit residential vocational technical education into the education framework in Maryland and the most effective organization and management of the programs recommended.

- ***To make recommendations regarding the financing of the new institution(s) including capital outlay, start-up costs and ongoing operating costs, and possible sources of funding.***

Financing is always one of the critical factors, particularly when new programs and/or institutions are concerned. The consultants very carefully weighed all the factors relating to this matter in an attempt to develop recommendations that would provide the maximum effectiveness at the lowest cost and with the least disruption to the ongoing system of education in the state.

- ***To study the cost-benefit to the State of Maryland of having the programs recommended for inclusion in the new institution(s).***

  Associated with the previous objective was a survey of the cost-benefit factors relating to the elements in this study. The consultants sought to pin point the costs and the cost benefits to the state in order to determine whether the financial return to the state in increased taxes and other benefits would offset costs and make the additional programs an economically sound investment as well as an educationally wise thing to do.

Chapter III contains a discussion of the methods used and the limitations of this study.

III. METHODS AND LIMITATIONS

A. METHODS

In carrying out Part II of this study, McManis Associates, Inc., used two basic methods to gather needed data, namely personal and group interviews and questionnaires.

A questionnaire was developed and sent to private vocational technical schools. The instrument was developed with the assitance of Mr. Harold Leslie, a member of the Maryland Advisory Council on Vocational-Technical Education and President of the RETS Electronic School in Baltimore. The questionnaire was sent to all private schools approved for veterans (127) in the Directory of Maryland Non-Public Specialized Schools dated January, 1974, published by the Maryland State Department of Education. In addition, any members of the Chesapeake and Potomac Association of Private schools not in the Maryland directory were sent questionnaires. The questionnaire and resulting responses are found in ***Appendices A & B.*** Thirty-eight of the 127 (30%) were useable responses. In addition, where critical data was needed, some private schools that did not submit questionnaires were called. At least five additional schools were contacted in this manner.

In addition, a memo was sent to over 1,000 businesses and industries in Maryland employing fifty or more people in order to determine job needs. Responses were received from sixty-three of these organizations. The memo is found in ***Appendix C.*** The consultants feel that the lack of a more substantial response to this latter solicitation is largely due to the recession and the fact that many firms are not hiring even though there may be specialized skills they could use. The fact that sixty-three responded and that many had unmet employment needs even in a period of economic recession is considered significant.

The Maryland Department of Employment and Social Services was contacted for a list of job openings which have been critical and largely unfilled for at least a 100-day period. The letter in response and the valuable data it contains is found in ***Appendix E.***

In addition to the above, meetings were held with key groups in the state to report progress on the study and to solicit information and assistance. Among the groups with whom meetings held were: the State Board of Education, the Maryland State Board of Community Colleges, the Maryland Community College Presidents, the State Superintendents of Schools, and the Chesapeake and Potomac Association of Private Schools. Special group meetings were also held with Maryland representatives of state governmental agencies, business, industry, and labor.

Beyond the above, meetings were held with a large number of individuals. Interviews were held with people in key positions in education, state government, and special agencies with knowledge of vocational technical education. Individual interviews were held with state legislators; officials in state agencies dealing with state colleges, community colleges, and the council on higher education; selected community college deans and presidents; superintendents of schools; officials of the University of Maryland; county officials; and people connected with special agencies such as the American Medical Association, who could lead us to data regarding employment in specialized areas. In addition, a great deal of relevant data was accumulated, perused, and included in the study from reports, studies, monographs, etc., given to the consultants by a variety of people who were contacted during the course of the study. The consultants are deeply appreciative of the excellent cooperation given by all people contacted.

B. LIMITATIONS

One of the major problems in carrying out this study was the lack of a good source of data regarding employment and manpower needs in Maryland. When the consultants began this study, it was assumed that such data was available. It was not. Nearly everywhere the consultants went, they discovered that there was a need for this data but that no state agency was developing it. The consultants were, therefore, forced to develop what data they could find and to do what they could to secure the data base for program recommendations. The nature and scope of this study prohibited the type of massive effort needed to obtain the "hard data" we would have liked. Consequently, one limitation to this study is the "soft data" upon which the specific program recommendations in some areas are based. These recommendations will need to be carefully reviewed and studied before specific actions can be taken.

Probably no need on the state level was more obvious than the need for "hard" employment and manpower data. The consultants strongly recommend that the State of Maryland select one state agency and assign this responsibility to them along with the funds and staff to do the best possible job. Much of the planning in state agencies and educational institutions depends on this data, yet the necessary information is not available. ***The State of Maryland should give this the highest priority.***

A related problem encountered as the consultants searched for manpower data was the difficulty in obtaining and interpreting this data, due to the effects of the state- and nation-wide recession. Nevertheless, enough data was received to make the consultants feel confident in the broad recommendations made in this report. The data, has weaknesses, particularly for the precise program recommendations contained in the ten-year program plan.

The program recommendations will need to pass through several state agencies before being implemented, therefore, they will be carefully scrutinized. It is hoped that in the meantime the recession will ameliorate and better manpower data will be made available for these agencies to use in making their decisions.

IV. FINDINGS AND RECOMMENDATIONS

A. INTRODUCTION

The consultants would like to thank the many individuals who shared their ideas and expertise in the course of this study. Frank, open discussions were held with many people in key positions who shared not only their ideas about "ideal" solutions to the vocational technical education needs of the state but also the "real" or possible solutions.

McManis Associates, Inc. was very much concerned about developing final recommendations which would not only meet the needs uncovered but which would be realistic in terms of being implemented. For example, in some ways it would have been easy to recommend that the State of Maryland establish a new state technical college or redesign an existing state college along the same lines as Oklahoma State Tech in Oklahoma or Ferris State College in Michigan. In discussing this idea with various state groups in Maryland, it became apparent that such a recommendation would be highly unacceptable for a variety of reasons. The consultants continued to consider this idea while exploring others to see if a synergistic solution could be found. McManis Associates, Inc. honestly believes that the recommendations that follow are the best that could be made, both from the standpoint of meeting the vocational technical education needs and of getting them implemented. This does not mean that there will not be opposition to some of the recommendations but it does mean that, of all possible alternatives, these are the best and most practical given the circumstances currently present in the State of Maryland.

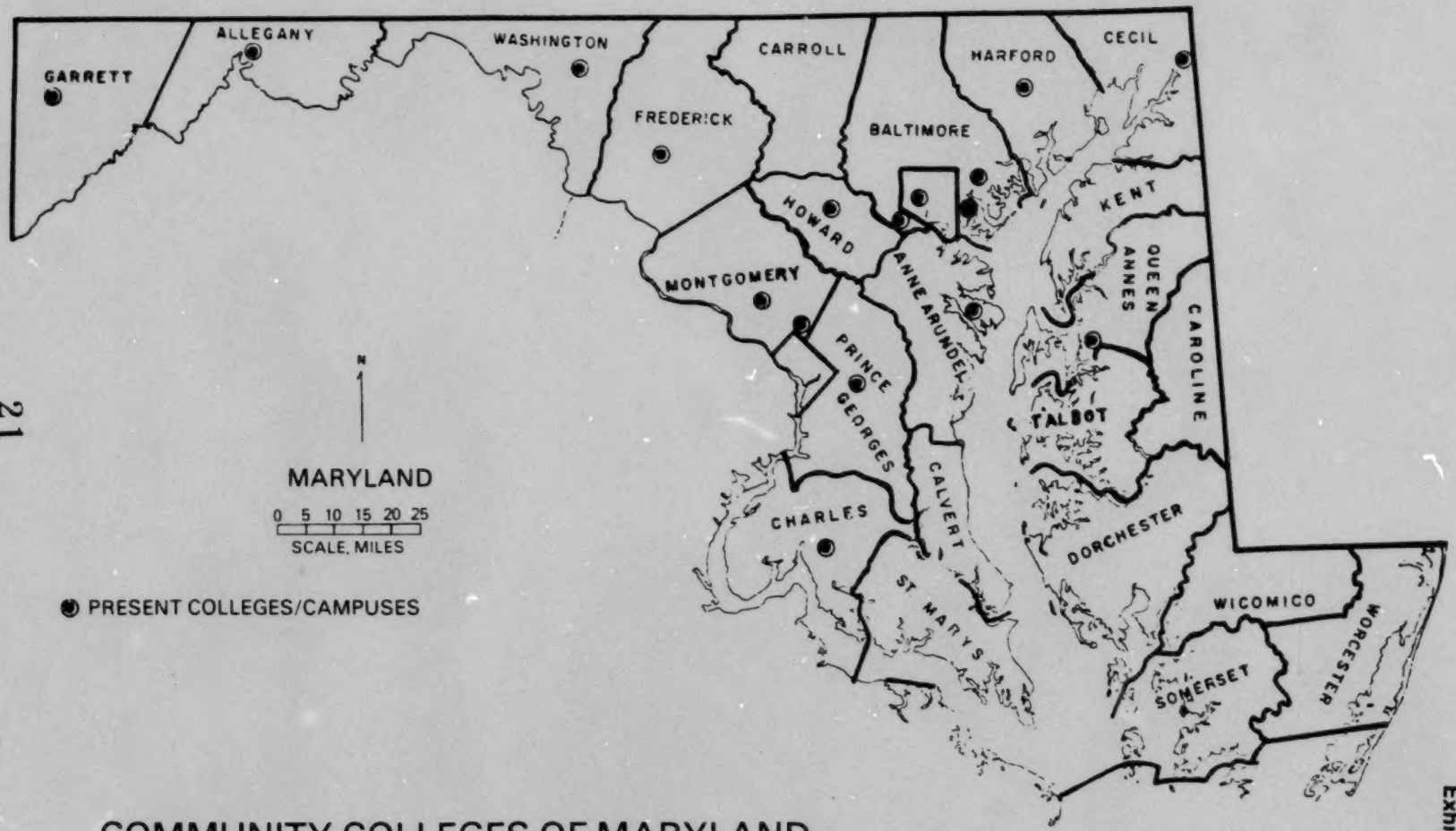
B. STRUCTURE OF POST HIGH SCHOOL VOCATIONAL TECHNICAL EDUCATION

The vast majority of post high school vocational technical education programs in Maryland have been placed in the community college system. Except for the agriculture program at the University of Maryland, all associate degree programs are in the community college system. Some adults attend selected courses on a part-time basis in area vocational technical high schools. However, the role of providing post secondary vocational technical education in the public sector has been assigned to the community college system.

The community college system now encompasses 16 colleges and 17 major campuses (see *Exhibit IV-A*). Seventeen of the local subdivisions in Maryland are served by a community college. Over 93% of the total state population resides in these countries and Baltimore city.[1]

---

1. Statewide Master Plan for Community Colleges in Maryland 1973-83, Maryland State Board for Community Colleges, State Treasury Building, Annapolis, Md., p. 35.



COMMUNITY COLLEGES OF MARYLAND

Exhibit IV-A

The community college system has grown rapidly in Maryland with enrollments increasing from a total of 4,604 (full-time and part-time) in 1960 to over 52,264 in 1972.[2] This figure was 64,679 by the fall of 1974 and is projected to be 91,323 by the fall of 1990.[3] In fiscal year 1974 over 34% of the community college students were enrolled in vocational programs.[4] As was mentioned in Chapter 1, the trend across the country, as well as in Maryland, is toward the rapid increase in enrollments in community college vocational technical programs. The number of enrollments is rising faster than enrollments in four year colleges as well as enrollments in general and liberal arts programs. Where community colleges do exist across the country, they are assuming the major role in post secondary vocational technical education. The pattern in Maryland is not atypical.

The consultants support this commitment and believe it to be a viable, workable situation. With the need for society to retrain a significant portion of its adult labor force and with the development of the "life long" learning concept, we believe the community college will assume an even more significant role in the future on the American education scene.

Having said the above in support of the current direction of post secondary vocational technical education in Maryland, the consultants should mention that there are still problems that exist that need to be overcome to meet unmet needs and to improve the system.

In Part I of this study, the consultants pointed out that lack of charge back legislation in the state placed financial barriers for some students who had to pay out-of-district tuition to take a program in another county that their college did not offer. Charge back legislation which is common in other states (e.g., Illinois, New Jersey) has been defeated in the state legislature for five consecutive years and does not seem likely to be passed in the near future.

In addition to the above, some counties do not have a community college. Seven counties are in this category – Carroll, Calvert, St. Marys, Dorchester, Somerset, Wicomico and Worcester. It should be noted, however, that efforts are underway to establish a community college on the eastern shore to serve Wicomico, Dorchester, Worcester, and Somerset counties. At the time of this report, it appears that two of the counties, Wicomico and Worcester, will join together to form a community college "without walls." If successful, these efforts would reduce the number of unserved counties from seven to five or possibly to three. In summary, some students do not currently have access to a community college because their county does not sponsor one.

---

2. Op. Cit. p. 7.
3. Maryland Council on Higher Education Enrollment projections.
4. Maryland State Plan for Voc.-Tech. Programs FY 1975, Maryland State Board of Education, p. II-71

Another problem occurs when a community college is not sufficiently large to provide a full range of vocational technical programs. It is doubtful, for example, if a community college with less than 1,000 full-time students can support a full range of programs. In the fall of 1974, nine of the existing community colleges had less than 1,000 full-time students (i.e., students carrying 12 or more semester hours). State community college board enrollment projections show that by 1984 this number should be reduced to three colleges with less than 1,000 full-time students (Cecil, Garrett, and Chesapeake).

It is obvious that some programs are needed in almost every college (e.g., secretarial science, accounting) while other programs (e.g., numerical control, dental hygiene) are not needed nor could they be offered because of expense and low enrollment potential. In recognition of this matter, the community colleges have started to discuss regional programs. In the Statewide Master Plan for Community Colleges in Maryland 1973-83,[5] there is a specific recommendation regarding regional programs. Two problems are listed which inhibit movement toward regional programs: (1) the lack of charge back legislation and (2) the absence of state authority to designate regional programs. The recommendations that follow attempt to overcome these problems and provide for regional and statewide programs.

Another problem which also affects the movement toward regional programs is the difficulty community colleges have in obtaining state funds to build residence halls for students from out of district. If the state accepts the fact that it is better to bring students to exceptional programs than to put the programs in every college at great expense, then it is reasonable to assume that the students should have a satisfactory place to live. Off-campus housing in some college areas can be used, but this type of housing is not always available in sufficient quantity and in some areas it may be highly undesirable due to location, high costs, or local environment.

It is for the above reasons that the consultants have concluded that the most effective way to meet the current needs of post high school vocational technical education in Maryland is to designate certain established community colleges as residential centers and to give new authority to the State Board for Community Colleges (SBCC) to designate state and regional programs. In addition, the SBCC should have the authority to implement a program of state funding so that those attending these programs from outside the county in which the residential college is located will only have to pay in-district tuition. These recommendations will be expanded in the following sections of this report.

C. RESIDENTIAL COMMUNITY COLLEGES AND THE ROLE OF THE STATE BOARD FOR COMMUNITY COLLEGES

The consultants recommend that the needed residential vocational technical education centers be structured within the current community college system. It is further

---

5. Page 25.

recommended that three existing community colleges be designated as residential centers and that provisions be made for them to establish residence halls on or adjacent to their campuses for the use of students who will attend from other parts of the state.

Before going on, it is necessary to deal with the question of whether community colleges should have residence halls. Many assume that since these institutions are basically commuter colleges and since they are placed throughout most states to put them close to the people they serve, that this negates the necessity for residence halls. This position is a valid one and it is the position the State of Maryland has assumed. Some public community colleges in other states do have residence halls, however, and the concept of a commuter college and a college with residence halls are not mutually exclusive. Community colleges which serve broad geographical areas or colleges in areas where weather conditions and terrain make commuting difficult frequently have residence halls. Community colleges with exceptional programs also frequently provide housing for students.

The matter of residence halls at community colleges has been addressed before in Maryland. The Heller Report of 1970 to the Maryland Council for Higher Education (MCHE) dealt with this issue (among many others) and recommended the establishment of residence halls at Allegany and Charles Community Colleges.[6] A sub-committee of the MCHE stated in an earlier report, "it is only in unusual circumstances that some consideration should be given to dormitories. . . . Those unusual circumstances that might mitigate towards the establishment of dormitories at a community college are the enhancement of the enrollment of a smaller institution so as to provide more economical operation, and the concentration of certain high-cost programs at these colleges. The State Board for Community Colleges is mandated by law to avoid unnecessary duplication of programs."[7]

The consultants believe that the circumstances alluded to in the subcommittee report above have come about. The primary reason for recommending this action now is that there are certain high-cost programs needed on a state or regional basis which should be offered at institutions with residence facilities so that they will be open to all students in the state. In addition, all of the colleges recommended as potential residential centers are of such a size now that the increased student enrollments resulting from being designated a residential college would improve their cost effectiveness and give them a better "economy of numbers." They would also use current facilities more effectively.

In addition, if these residential centers are established, it is possible that one or more future community colleges may not be needed, since students from sparsely settled counties presently without community colleges could go to one of the residential community colleges and obtain the programs they desire.

---

6. Years of Growth – The Outlook for Maryland's Higher Education Facilities Needs, Robert Heller Associates, Inc., 1970, pp. 66-68.

7. Majority Report of Subcommittee IV – Dormitories at Community Colleges – Maryland Council for Higher Education.

The State of Maryland can congratulate itself on developing a fine system of community colleges with many appropriate vocational technical programs. The time has arrived, however, to take another step in order to more effectively serve the needs of the citizens of the state and to more fully utilize already built educational facilities.

The consultants recommend that the State Board for Community Colleges (SBCC) be given new authority to designate regional and state vocational technical programs, thereby qualifying such programs for special state funding and opening them to all state residents at the same in-district tuition rate. A state program in this context would be of such nature that only one would be needed for the entire state in order to meet state employment needs. A regional program would be one where two to three programs might be needed to meet state employment needs. While this report treats regional and state programs alike in terms of funding, etc., a differentiation between the two is made because, as these recommendations are implemented, it may be necessary to differentiate in the level of funding between state and regional programs. There is a logic for greater local funding for regional programs. Initially, however, the consultants recommend similar funding for both types of programs. (See Section IV-G 3)

In the context of the consultants' recommendations, most of the regional and state programs that will be started in the future would be assigned to one of the three residential community colleges recommended later in this report. Most "one of a kind" programs would be assigned to the residential community college located in the center of the state in the middle of the population so as to put these programs within commuting distance of most of the state's citizens.

Some programs, however, might be better placed near facilities or natural resources that relate to the program. For example, marine programs should be near the water, mining programs in an area where mining is taking place. The SBCC should have the authority to place such a program in a college other than a residential community college if two factors apply: (1) the placement in other than a residential community college is necessary to put the program near resources essential to the program, and (2) the SBCC is satisfied that residential students can be adequately accommodated and the college agrees to serve the needs of residential students.

Related to the previous point is the fact that some regional and "one of a kind" programs now exist (e.g., the environmental programs at Charles Community College and the aviation mechanics program at Frederick Community College). The SBCC should have authority to designate existing programs as regional or state programs if the factors listed in the paragraph above apply. The SBCC should consider moving some programs to residential colleges if these two factors are not satisfied and if the needs of the public would be better served if the program was located in a residential center.

The consultants also recommend that the SBCC be given the authority to contract with private schools for certain vocational technical programs when it is determined that

to do so would be less costly to the state than to start a new program. This device can be very useful, particularly in meeting short range employment needs where contracting with existing private school programs could provide the state with a number of new employees for two or three years as needed and then be dropped. If a new program had to be started to meet such a need, it would probably be more costly and more difficult to discontinue.

In order to make the decisions related to the above recommendations, the SBCC needs "hard" manpower data. This was mentioned earlier but needs to be re-emphasized. If the state does not have an agency to gather this manpower data, the consultants recommend that they consult with the MACVTE in selecting one and/or ask the MACVTE for a specific recommendation on the matter.

D. STRUCTURE OF RESIDENTIAL COMMUNITY COLLEGES

As was mentioned earlier, the consultants recommend the establishment of three residential community colleges. This section will detail location, organization, administration, and other details.

1. LOCATION

The consultants recommend the addition of residence facilities at Allegany Community College in Cumberland, Howard Community College in Columbia and either Chesapeake Community College in Wye Mills or the new community college being considered on the eastern shore. The case for recommending Allegany and Howard is clear cut. The eastern shore situation is more difficult. ***Exhibit IV-B*** indicates the location of these colleges and a 30-mile radius around each for comparative purposes.

a. Allegany Community College

Allegany Community College (ACC) is particularly well suited for this purpose for the following reasons:

1. They have ample land (370 acres) to handle additional growth and the addition of residence halls.
2. The college is located in Appalachia, and qualifies for special funding. This funding could aid in getting some state or regional programs.
3. The college has a close working relationship with the local area vocational technical high school and uses their facilities in the late afternoon and evening. These facilities could be used to supplement the college facilities for some programs.

4. The college has just completed a very fine vocational technical facility which can hold additional students and programs.

5. The college is accessible from both the west and east and is served by a good road network.

6. The college has a tie-in to cable TV and is equipped to adapt to new instructional strategies as they develop.

7. The college is located in an area that would be attractive to resident students and would offer them a variety of activities.

8. The college is receptive to the idea of being designated as a residence center and is interested in further discussions.

9. The college is committed to quality vocational technical education with well over 40% of its students currently in such programs.

10. The college is very close to a regional health center and a planned mental health center, which could relate to college programs and services to residential students.

In summary, Allegany Community College is, in our judgment, best suited to serving as the residential vocational technical center for western Maryland.

b. Howard Community College

Reference to Table IV-B shows the primary reason Howard Community College (HCC) was selected to serve as the residential center for the central part of the state. HCC is located in the center of the state in the Baltimore-Washington corridor. Howard is ideally located for "one of a kind" type programs that would profit from being in close proximity to the population centers of the state in order to serve a maximum number of commuter students in addition to those who would be in residence. A thirty-mile radius around HCC takes in both the Baltimore and Washington population centers.

The reasons for selecting HCC are as follows:

1. The location of the college is in the center of the state between the two major population centers.

2. The college has a new 119-acre campus with room to add residence halls.

3. The college is committed to a task-oriented systems approach to vocational technical education.

4. The college is located just off Route 29, a major Baltimore-Washington artery and located a few miles from Interstate 95 and the Baltimore-Washington Parkway, which also connects with those population centers and the beltway which surround each. In short, the college is readily accessible.

5. The college is near some of the state institutions located in the central part of the state and could develop programs in conjunction with the Maryland House of Correction, the Patuxent Institution, and others.

6. The college is only a short distance from a fine area vocational technical high school which they now use for evening programs. This could be used more for residential programs.

7. The college has not yet built a vocational technical facility and could plan and develop a facility to meet some of the diverse needs that will be mentioned later in this report.

In summary, HCC is in an ideal position to serve as the regional residential center for the central part of the state and, in addition, be the institution to which "one of a kind" programs will be assigned in the future, provided there are no overriding reasons for assigning them elsewhere (e.g., need to be on the water for marine programs or near forests for forestry).

c. Eastern Shore

McManis Associates, Inc. recommends a residential vocational technical center for the eastern shore area. However, the specific location is not as clear as in the case of Allegany or Howard. If a recommendation were to be made today, the consultants would likely recommend Chesapeake Community College. There are many factors in its favor. In fact, at present, it is the only established community college on the eastern shore. It was noted earlier, however, that there are efforts to establish a vocational technical-oriented community college to serve the four counties on the lower eastern shore. Recent information indicates that a recommendation is forthcoming to establish a community college to serve only two of the four counties (Wicomico and Worcester). If established, this college will have a close relationship with Salisbury State College. The college will be using an open college concept, which has advantages and disadvantages as far as their service as a residential center is concerned.

The advantages of selecting Chesapeake Community College are:

1. The college is established, accredited and has a new campus to serve as a base of residential operations.

2. The college is currently constructing a new vocational technical building to house a number of new and existing programs.

3. The college has adequate land for the addition of residence halls.

4. The college has 25 acres on the Chesapeake Bay (3 miles from the campus) and is planning several programs associated with marine life and food processing which will be "one of a kind" programs.

5. The college is interested in being considered as a residential center.

6. The college is nearer to the population center of the state and could more easily serve students from these areas coming to the college for the special programs.

The possible advantages of selecting the proposed community college in Salisbury is:

1. The location is more advantageous to the population on the lower eastern shore.

2. The college is heavily oriented to vocational technical education.

3. The college is in close proximity to the major ocean resort areas around which some programs could be developed.

4. The college has a close relationship to Salisbury State College with the potential of sharing facilities, faculty, residence halls and other resources.

5. The location in a larger population center (Salisbury) and a relationship to more business and industry than is the case with Chesapeake.

6. An interest in being considered as a residential vocational technical center.

The major problem in the selection of this institution, if established, is that it will be a college "without walls." It will not have a campus or extensive facilities of its own. This latter point makes it very difficult to establish residence halls and means that an extensive transportation system would have to be established to transport students to the various classrooms and lab facilities. This problem would be ameliorated somewhat were Salisbury State or the University of Maryland, Eastern Shore, to become the basis for the college's programs and if their residence halls were to be used.

As mentioned earlier, the question of whether the college will be established on the eastern shore is still being considered. The recently released Rosenberg Commission Report recommends that a regional university system be established for the eastern shore area of the state which would include Chesapeake College and the new community college, if established.[8]

---

8. Rosenberg Commission Report, Special Report on Education to Governor Mandel of Maryland, May 1975, p. 86.

Should this come about, the residential vocational technical center should relate to this entity. One additional point needs to be made. At present there is some question about the future of the University of Maryland Eastern Shore (UMES). This institution has residence halls and academic facilities. Should it become available for use as a residential community college, this option would be desirable and should be fully investigated. In short, in the consultants' judgment, should UMES become available as the base for the new community college in Salisbury this would weigh heavily for creating the residential center there rather than at Chesapeake.

The events of the next several months will determine a number of factors related to a final decision of which college should be designated on the eastern shore. The consultants recommended that this matter be followed closely over the next six to twelve months. If no significant changes occur, we recommend that Chesapeake Community College be designated as the residential center for the eastern shore. If major changes do come about, they will need to be assessed in light of the data in this report and a final decision be made by the SBCC.

2. ORGANIZATION AND CONTROL

The consultants recommend that the residential colleges remain under the control of their local boards. The only major changes needed would be in the areas of funding, facilities (residence halls) and some minor administrative changes (see Section III).

3. ADMINISTRATIVE ORGANIZATION

As was mentioned earlier, the consultants recommend that the residential centers remain under the control and administration of the colleges. Since each college differs somewhat in its organizational structure, it should be allowed to administer the residence halls and programs as it sees fit. However, as a requirement for the special state funding, each college should be required to demonstrate that it is making a satisfactory effort in placing the graduates of its vocational technical programs. It should have a full-time director of placement. However, if it can demonstrate adequate placement effectiveness without a full-time person, it should have the opportunity to remain as it is. (See Section VI for further information on placement.)

In addition, each college should be required to demonstrate that it has adequate professional staff in the financial aid and counseling areas to meet student needs in those areas.

The consultants strongly urge that the three colleges include assessment centers which will allow for the extensive testing of students (including handicapped students — see Section E-2) to determine if they have the aptitudes, skills, and knowledge necessary to enter and complete the array of vocational technical programs. Such assessment centers are now being developed in Maryland. If for some reason the college cannot develop a center on campus, it should develop a close working relationship with the closest center in order that the necessary testing and evaluation can be done.

4. PLACEMENT OF GRADUATES

It is expected that a minimum of 80 % of the graduates of all programs operated under the sponsorship of the residential community colleges would be offered employment in a position directly related to the program studied within one month after graduation. Placement efforts should continue after that time until all graduates have been offered employment.

To accomplish this objective, it is recommended that the college have a full-time placement coordinator or director who would ultimately be responsible for seeing that all graduates are offered a position of employment directly related to their programs of studies somewhere in the State of Maryland. In the performance of the duties of this office, the coordinator or director would have the responsibility:

1. To develop and maintain contacts with those firms or agencies employing the type of personnel being graduated.

2. To cooperate and work with all other agencies, public and private, toward consummating employment of the graduates.

3. To maintain records on the placement of graduates and make periodic studies of their success in such employment.

4. To work with the college department chairmen and their staffs in all efforts to place their graduates, particularly in regard to their recommendation as to the graduate best suited to each position with a specific firm.

5. To visit with the managers and directors of personnel of those firms requesting graduates to assess the opportunities for graduates and build rapport with each firm.

6. To report to the various departments of the school such comments as are made by the employer regarding the college program of studies and the employed graduate.

7. To encourage the development of cooperative programs of study for advanced students with interested employers and the respective departments of the college involved in accordance with the cooperative plan of the school. NOTE: Several of the firms contacted in the course of this study have indicated an interest in a cooperative program.

8. To place graduates into apprenticeship programs in those occupations which are apprenticeable and to work with the craft advisory committees to gain apprenticeship credit for the education and training completed at the residential institution.

9. To make recommendations to the college administration for the expansion or deletion of existing programs and for the addition of needed new programs according to employment demands.

10. To work with students prior to graduation to locate job possibilities in the student's home community or the area of the state preferred by the student.

11. To prepare and revise materials to be handed out to students to assist them in locating their own jobs in their home community.

12. To monitor the following indices and report to the administration any abnormal trends:

    a. Percentage of drop-outs for employment reasons.
    b. Placement of graduates before actual graduation.
    c. Placement of graduates within one month after graduation.
    d. Date of placement of all graduates of program.
    e. Percentage of students locating their own jobs.
    f. Percentage of students placed by others.
    g. Job openings unable to be filled because of lack of graduates.

5. HOUSING

As was discussed earlier, the consultants recommend that each of the three community colleges have residence halls. These residences will be built from either state funds on the campus or from private funds either on or off the campus. The consultants recommend building apartment-type units of one- and two-bedrooms with efficiency kitchens in order to accommodate students of various kinds (married/single, males/females, older/younger) in a flexible mode where the students will maintain a maximum responsibility for their own needs and behavior.

Housing in the apartment-type configuration will still require some college attention and each college should have an administrator who has responsibility for housing. If private funds are used to finance facilities off campus, the college need not take such a responsible position. If the facilities are on campus, the college must devote some attention to running the facility. Having students housed full-time on campus will also necessitate some additional arrangements regarding health and recreational matters relating to this resident group. Each college will need to assess its responsibilities and opportunities in this regard and assign staff and develop programs accordingly.

E. STUDENTS TO BE SERVED

It is recommended that the proposed residential community colleges serve only post high school students and adults at this time. The adult classification would include high school and college drop-outs. This recommendation is made because of the strong need for vocational education opportunities and the employment needs of this age group in the State of Maryland at this time. The age levels in this group would be between 17 and 65 years of age.

The admission qualifications will vary according to the requirements of the specific program of study and the mental and physical demands of the occupation.

1. HIGH SCHOOL STUDENTS

In recent years, the State of Maryland has embarked on a system of County Area Vocational Technical Schools, which, when completed within a few years, should go a long way in meeting the vocational technical education needs of all secondary students. A further study should be considered when the system of area vocational technical schools is fully operable to determine if at that time there is any need for a residential vocational technical school to serve these youths.

It is also recommended that, by a selected process, superior vocational technical high school students may be admiitted to a residential community college on an early admission basis during their senior year of high school. Most community colleges now have provision for this type of admission, so it is advised that it be applied to the new vocational technical program as well as to the transfer programs. Such admission will also require that the high school student admitted under this policy be of employable age at the contemplated time of graduation.

2. THE HANDICAPPED

It is said that some handicapped person can be found to fill every type of job in the United States from the president on down. The problem is to match the handicapped person and his abilities to the job.

It is advisable to have all handicapped persons, as well as those persons who do not know where their aptitude lies, to enroll first in a vocational occupation assessment program. (See Section D-5 for further information.) This assessment should help each person match his interest, ability to succeed, aptitude, hearing, sight, mobility, physical capacity and stamina to an occupation in which he or she can compete favorably with other employees in the same job.

Such a vocational occupational assessment program consists of: (1) a number of tests: aptitude, interst, I.Q., comprehension, color blindness and sight, etc., (2) a review of a late physical examination to determine physical limitations, if any, on lifting, standing, walking, stooping, etc., and (3) an occupational try-out exploratory experience in at least 4 or 5 occupations in which the applicant has a reasonable chance of success based on all of the above tests and examinations. A report is made by each occupational instructor under whom he or she had the try-out experience as to the prognosis of eventual success for the individual in that occupation. By putting all of the results together with the student's expression of his own desires in a final conference, an occupation is usually found that is acceptable to all and one which interests and motivates the student.

A vocational occupation assessment program would be advantageous for everyone and should be a part of each residential college counseling program to make such counseling truly meaningful. These programs reinforce a person's understanding of what he or she wants to be and has certainly been proven beneficial by helping students better understand themselves and their capabilities. Some high schools are developing these centers. Each handicapped student, as well as each regular student, should go through an assessment before entering a program.

All handicapped persons completing such a program should be enrolled in a full-time occupational program without question as to his or her mental capacity or physical condition according to the recommendation made by the assessment program.

The University of Maryland, Division of Vocational Education, is developing a program now which will be ready in about one year.

One of the most important jobs of a community college is proper guidance and counseling for all of its students and applicants. Thus, each community college should have a strong counseling program. At least the three residential schools should have a vocational occupation assessment program similar to that outlined here.

Provisions should be made in each community college and particularly in the three recommended residential community colleges that all buildings conform to architectural specifications for the handicapped in both instructional and housing facilities. Access to equipment and facilities should be fully available to the handicapped for all facets of the college including both instructional and non-instructional units.

3. OUT-OF-DISTRICT STUDENTS

The lack of charge back legislation and the fact that an out-of-district student must pay approximately double the tuition for any program of studies not offered in his home district has resulted in a number of programs being inaccessible to some students. (The consultants do not take issue with charging a student double tuition if the program of studies he is enrolled in is available to him in his home district community college.) One result is that community college programs crucial to the state are being deleted because of lack of students and more are in danger of such deletion for the same reason, in spite of the fact that more students from other districts would have liked to enroll but could not afford the double tuition plus the cost of transportation and/or room and board.

The danger in the present system of operation is that as enrollment fluctuates in a particular discipline from year to year, some programs crucial to the economy of Maryland will be dropped because of low enrollment in an off-year. It is far more economical to allow the sponsor district students to have priority of admission and then fill up the class with students from other non-sponsor districts, rather than establishing a number of duplicate programs in several community colleges which are all operating inefficiently

because classes are only partially filled. Charge back legislation would allow the community colleges to operate much more efficiently with a resulting lower per-student cost to the taxpayer.

We recommend that three community colleges be designated as residential colleges providing some form of housing for those students who reside too far away to commute daily to classes. Many such students will be attending programs of study not taught at their home district community college or attending from counties which do not presently sponsor a community college. (Seven counties do not presently sponsor such a college.)

It is also recommended that the three residential community colleges be designated as the ones to be approved to offer those occupational programs where the demand is not great enough to warrant duplication by other community colleges but where there is a proven need for such a program somewhere in the state to meet state employment needs.

Thus, it is recommended that all students attending the three residential community colleges would be paying the local in-district tuition rate with the exception of those students attending from another sponsor district which provides the same program of studies in its own community college. These students would pay approximately double the local tuition.

The State Board for Community Colleges should have the perogative to name a specific program of studies in any community college as being unique and necessary to the state and qualifying as a single tuition rate program open to all state residents.

F. PROGRAMS TO BE OFFERED

1. TEN-YEAR PLAN

The consultants arrived at the following recommendations on programs to be offered by analyzing all of the data that could be obtained concerning the projected annual manpower needs in Maryland for a selected listing of occupations, all requiring less than four years of college. The selected listing was compiled from a listing of Allied Health programs at this level; those occupations listed in the Interim Manpower Projections 1975-76, State of Maryland; the listing of Highest Demand Occupations in the Job Bank of the Maryland Department of Employment (Appendix E); the listing of job openings compiled from the reply of 63 industrial and scientific firms in response to the consultants' memorandum and, in three cases, to occupations for which Maryland should have a need although there are no statistics to date to back up the suggestion except that these occupations seem to be growing in the state. The three are blacksmith, marine science, and woodcarving.

To this listing, we have applied all of the data concerning graduation of programs offered in private schools and public community colleges.

In a number of cases, the specific occupation was not named in the various sources except that it was included in a total such as : "other medical technicians," thus, for example, the number of surgical technicians could not be reported.

In a few cases, both technicians and mechanics in an occupational area are reported as a total so that we could not report them separately.

It will be noted in ***Exhibit IV-C*** that in a few cases, the reported annual job openings are lower than the number of qualified graduates of the private schools. The consultants used the actual number of graduates placed in the occupation as the number of qualified graduates. Thus, it can be seen that the annual job openings as reported are not necessarily as firm as was desirable, but are all that is available.

The listing of occupations can certainly be expanded by continuing research into additional occupations for which such occupational education may be provided, particularly in the Allied Health area. The consultants believe that most of the production maintenance and service occupations which are crucial to the economic development of the State of Maryland have been covered.

Exhibit IV-D contains those occupations listed in Exhibit IV-C that are recommended to either be expanded or as new post secondary education programs to be started. It shows the present production by the various community colleges, the planned production of the new approved programs that will be graduating students by 1977 with the community colleges involved and the proposed new occupational programs recommended to be added by college and year.

The consultants are unable to forecast with any degree of accuracy the number of graduates of the private schools in 1985 by programs and thus can only report again the number of graduates that secured jobs in 1974 as qualified graduates.

While the consultants are primarily interested in the programs to be expanded or started in the three recommended residential community colleges, there is also included data regarding the expansion of certain present programs in other community colleges as the logical solution to the supply of the needed manpower rather than the unnecessary duplication of the program at great expense.

The employment need statistics for Allied Health occupations for the State of Maryland are presently not available except in six disciplines. They are: dental assistant, dental hygienist, practical nurse, registered nurse, and x-ray or radiation technician.

The Maryland Comprehensive Health Planning Agency has been making a study of all Allied Health needs for Maryland and the statistics should be available by the middle of June, 1975. The consultants are unable to make a recommendation in regard to 32

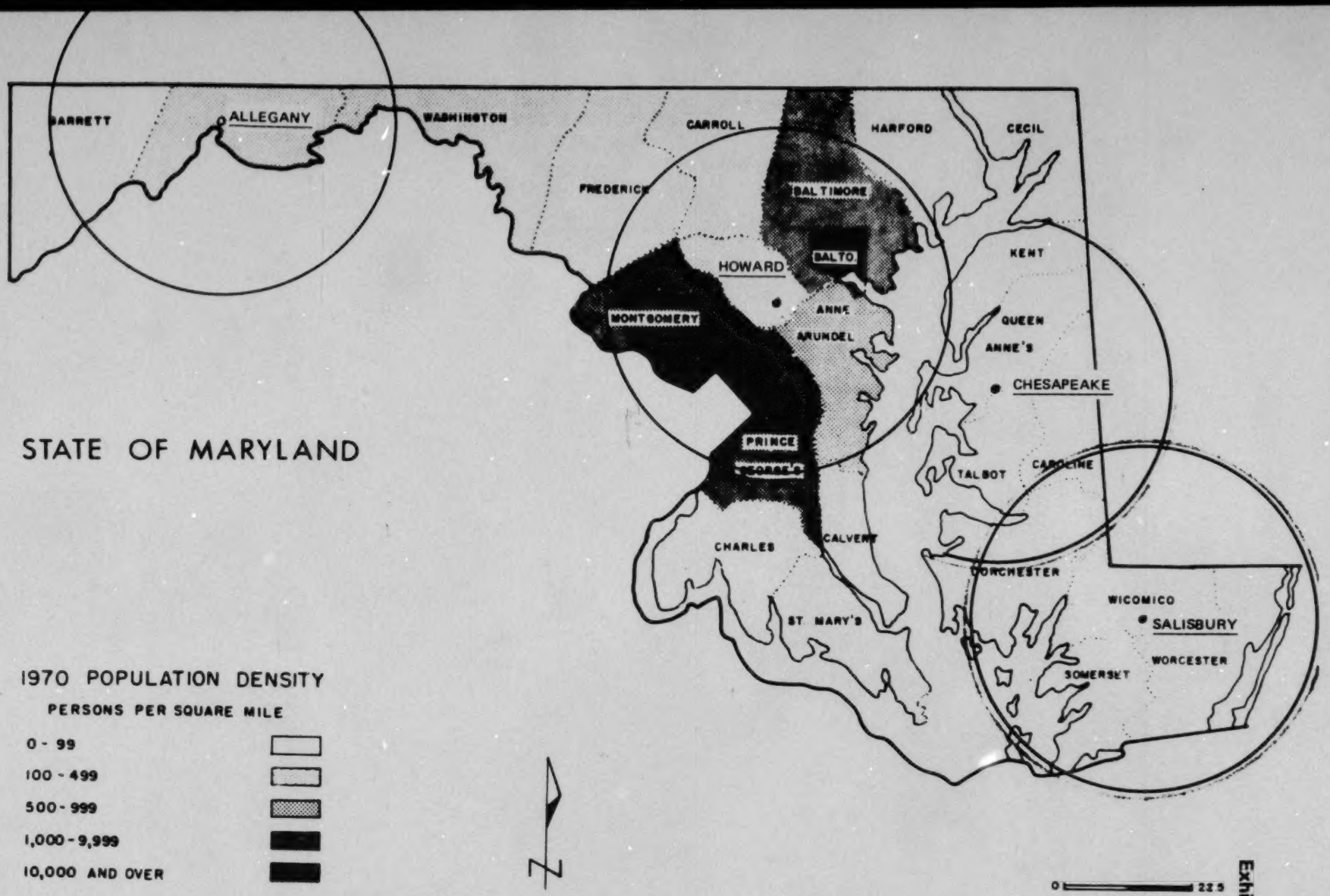

GARRETT
ALLEGANY
WASHINGTON
CARROLL
HARFORD
CECIL
FREDERICK
BALTIMORE
BALTO.
HOWARD
KENT
MONTGOMERY
ANNE ARUNDEL
QUEEN ANNE'S
CHESAPEAKE
PRINCE GEORGE'S
TALBOT
CAROLINE
CHARLES
CALVERT
DORCHESTER
WICOMICO
SALISBURY
ST MARY'S
WORCESTER
SOMERSET
STATE OF MARYLAND
1970 POPULATION DENSITY
PERSONS PER SQUARE MILE
0 - 99
100 - 499
500 - 999
1,000 - 9,999
10,000 AND OVER
N
0
22.5
MILES

Exhibit IV-B

SELECTED POST SECONDARY OCCUPATIONAL EDUCATION PROGR
SHOWING ANNUAL NEED AND NUMBER OF GRADU

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads – All Md. Schools			⑤ 1977 Est. Qualifie Grads – All Md. Schools		
				Private	Public	Total	Private	Public	Tot
Agriculture									
Farm Equipment Mechanic	1,400	112	18						
Blacksmith									
Allied Health									
Blood Bank Technician									
Child Day Care Assistant								20	2
Cytological Screen. Technician									
Dental Assistant	13,000	883	88	136	77	213	136	95	23
Dental Hygienist	4,800	311	31		58	58		58	5
Dental Lab Technician	2,000				15	15		15	1
Electrocardiograph Tech.									
Emerg. Med. Serv. Technician									
Environmental Health Technician									
Histologic Technician									
Hosp. Equip. Repair Technician									
Inhalation Therapy Assistant					12	12		12	1
Laser-Elect-Optical Technician									
Medical Illustrator									
Medical Lab Technician	13,000	2,897	290	4	64	68	4	64	6
Medical Library Assistant									
Medical Photographic Technician									
Medical Records Technician		500	50						
Medical Secretary-Office Assistant		1,288	130	150	89	239	150	89	23
Mental Health – Alcohol Assistant									

① Source: 1974-75 Occupational Manpower and Training Needs – U.S. Department of Labor
② Source: Interim Manpower Projections 1975 and 1976, State of Maryland, Department of Employment and Social Services
③ Column 2 Projection 1970-1980, divided by 10
④ Source: Report of Degrees Awarded, July 1, 1973 – June 30, 1974, Maryland Council for Higher Education
⑤ Listing of approved programs to start 1975 with expected graduates added to 1975 graduates
⑥ Number of job openings in Job Bank (see Appendix E)
⑦ Number of firms listing occupation
⑧ Number of private schools responding to inquiry of total number teaching programs

UPATIONAL EDUCATION PROGRAMS IN MARYLAND
NEED AND NUMBER OF GRADUATES

	④			⑤			②	⑥	⑦	⑧
	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
	Private	Public	Total	Private	Public	Total				
						0	30			
						0				
						0				
					20	20				
	136	77	213	136	95	231				1 of 1
		58	58		58	58	64			
		15	15		15	15				
		12	12		12	12				
	4	64	68	4	64	68	496		1	
							85			
	150	89	239	150	89	239				7 of 16

or
f Employment and Social Services

r Higher Education
tes

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads -- All N.d. Schools			⑤ 1977 Est. Qua Grads – All Schools	
				Private	Public	Total	Private	Public
Mental Health – Geriatrics Asst.								
Mental Health – Mental Retard. Asst.								
Mental Health – Voc. Rehab. Asst.								
Occupational Therapy Asst.								
Optical Assistant								
Nuclear Medical Assistant								
Physical Therapy Assistant		91	10		12	12		12
Physician Assistant								
Podiatric Assistant								
Practical Nurse	70,000	3,191	320	39		39	39	
Psychiatric Technicians								
Registered Nurse	75,000	9,565	1,000		586	586		586
Respiratory Ther. Asst.								
Speech and Audiology Asst.								
Surgical Technician								
Veterinary Sci. Asst.								
X-ray-Radiation Technician	6,500	751	75		52	52		52
Recreation-Soc. W. Tech.					107	107		127
Auto-Diesel-Heavy Construc. Equip.								
Auto Body Mechanic	4,100	228	23					
Auto Mechanic	} 22,300	2,583	258	262	6	268	262	12
Auto Technician								45
Diesel Mechanic	} 4,500			} 65		} 65	} 65	
Diesel Technician								
HCE Mechanic	} 18,500	572	57					
HCE Operator				} 80		} 80	} 80	
Truck Driver (ICC)	64,700	4,038	404					
Truck Mechanic	5,100							
Aviation								
Aviation Mechanic (A&P Lic.)	7,000	118	12					12

(2)	(3)	(4)			(5)			(2)	(6)	(7)	(8)
d. Interim Manpower oj. 1979-80	Projected Annual Need in Md.	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
		Private	Public	Total	Private	Public	Total				
91	10		12	12		12	12				
,191	320	39		39	39		39				2 of 5
,565	1,000		586	586		586	586				
751	75		52	52		52	52	170			
			107	107		127	127				
228	23										
,583	258	262	6	268	262	12	274			2	3 of 3
						45	45				
		65		65	65		65			1	1 of 1
572	57									1	
		80		80	80		80			1	1 of 1
,038	404									2	
										1	
118	12					12	12				

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads – All Md. Schools			⑤ 1977 Est. Quali Grads – All M Schools		
				Private	Public	Total	Private	Public	T
Barber-Cosmetology									
Barber	5,000	326	33	40		40	40		
Cosmetologist	51,000	4,297	430	149		149	149		1
Building Construction									
Building Supts.		1,239	124					20	
Carpenter	37,000	2,560	256					34	
Drywall Mechanic	1,100	534	54						
Floor Covering Mechanic	3,200	440	44						
Mason	10,700	1,153	115						
Painter	14,700	879	88						
Pipefitter Plumber	} 16,300	2,855	285						
Business									
Accountant	41,900	3,880	388	10	84	94	10	96	1
Bookkeeper	118,000	6,401	640		26	26		26	
Cashier	96,000	7,541	750						
Management					63	63		25	
Receptionist	55,100	1,936	194	95		95	95		
Sec – Stenographer	411,000	28,711	2,870	367	240	607	367	270	6
Office Machine – Keypunch	13,700	627	65	30		30	30		
Typist	115,700	7,861	786	91		91	91		
Telephone Operator	16,000	810	81						
Cabinet Making									
Cabinet Maker		69	7						
Finisher Millman		} 43	5						
Model and Pattern Maker		62	6						
Woodcarvers									

(2)	(3)	(4)			(5)			(2)	(6)	(7)	(8)
Interim mpower 1979-80	Projected Annual Need in Md.	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
		Private	Public	Total	Private	Public	Total				
326	33	40		40	40		40	103			10 of 49
,297	430	149		149	149		149	1,165			
,239	124					20	20	227			
,560	256					34	34	683		5	
534	54						0	60			
440	44						0	65			
,153	115						0	206		2	
879	88						0	310			
							0	458		1	
,855	285						0			6	
,880	388	10	84	94	10	96	106	976			
401	640		26	26		26	26	2,236			
541	750							1,938			
			63	63		25	88				
936	194	95		95	95		95	688		2	7 of 16
711	2,870	367	240	607	367	270	637	8,733		3	
627	65	30		30	30		30	366	8	3	
861	786	91		91	91		91	3,328	18	5	
810	81							691		2	
69	7						0	40	3	3	
							0		1	2	
43	5						0	18	2	3	
62	6						0	23	1	3	
							0				

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads – All Md. Schools			⑤ 1977 Est. Qual Grads – All M Schools		
				Private	Public	Total	Private	Public	T
Computer									
Computer Operator	27,000	4,378	440	134	100	234	134	100	2
Computer Programmer		8,725	880	72	64	136	72	64	1
Distributive Occ.									
Buyer	190,000	1,758	176						
Display									
Retail Management		3,141	314	3	86	89	3	86	
Salesperson		37,684	3,768						
Drafting and Engineering Technology									
Architectural Draftsman	17,900	2,519	255		27	257		27	2
Civil Engineering Draftman					1			5	
Civil Technician					6			31	
Electrical Draftsman				164			164	0	
Engineering Technician					55			55	
Mechanical Draftsman					4			4	
Structural Draftsman								0	
Surveyor	2,700	3,783	380					10	
Technical Illustrator	3,400								
Tool & Die Designer									
Electrical									
Appliance Repair	6,100	1,302	130						
Electrician	11,100	2,888	290						
Electro-Mech. Equip. Repair		590	60						
Motor Repair	9,800								
Electronics									
Data Processing Mach. Repair	4,100			3		3	3		
Radio-TV Repair	4,400	712	71	25			25		
Electronics Tech.		2,559	256	77	67	144	77	67	1

(2)	(3)	(4)			(5)			(2)	(6)	(7)	(8)
. Interim anpower . 1970-80	Projected Annual Need in Md.	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
		Private	Public	Total	Private	Public	Total				
4,378	440	134	100	234	134	100	234	532		3	
8,725	880	72	64	136	72	64	136	1,175	5	1	2 of 2
1,758	176						0	348			
							0				
3,141	314							488			
37,684	3,768	3	86	89	3	86	89	8,755			0 of 2
			27			27					
			1			5				2	
			6			31				4	
2,519	255	164		257	164	0	286	370		1	
			55			55		6	7	2	
			4			4			27	7	1 of 5
						0				1	
3,783	380					10	10	57		5	
										3	
										2	
1,302	130						0	183			
2,888	290							471	7	12	
590	60							136		3	
										1	
		3		3	3		3	159			
712	71	25			25		25	115	2	1	3 of 4
2,559	256	77	67	144	77	67	144	327	30	12	

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads – All Md. Schools			⑤ 1977 Est. Qual Grads – All M Schools		
				Private	Public	Total	Private	Public	T
Graphic Arts									
Camera Man	2,700	60	6						
Compos. Mach. Oper.		285	30					15	
Layout Man	4,300	403	40	150		150	150		1
Printer	6,100	1,157	115						
Hotel and Restaurant Management									
Bartender	8,800	610	61						
Cook-Chef	52,000	2,213	221						
Dietetic Assistant									
Food Service Management									
Food Process & Inspection									
Hotel & Restaurant Management					20			20	
Meatcutter	4,400	438	44						
Waiter & Waitress	86,000	4,064	406						
Industrial Technology									
Industrial Technician		81	8		18	18		18	
Instrument Repair									
Instrument Repair	4,800								
Laboratory Tech. General & Ind.									
Laboratory Tech.					12	12		18	
Machine Trades									
Heat Treatment Technician		123	16						
Insp. & Qual. Control Technician	44,700	383	40						
Machine Operator	25,600	802	80						
Machinist	13,100	313	31						
Maintenance Mechanic	44,000	12,577	1,258						
Tool & Die Maker	4,200	107	11						
Millwright	3,300	86	9						
Layout & Set-up Man	2,200	313	31						

(2)	(3)	(4)			(5)			(2)	(6)	(7)	(8)
Interim mpower 1976-80	Projected Annual Need in Md.	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
		Private	Public	Total	Private	Public	Total				
C0	6							4		4	
285	30					15		64		1	
403	40	150		150	150		165	68		1	1 of 1
,157	115							207		10	
610	61						0				
2,213	221						0				
							0				
							0				
							0				
			20			20	20				
438	44						0				
,064	406						0				
81	8		18	18		18	18			2	
							0			4	
			12	12		18	18			2	
123	16						0	1			
383	40						0	113		6	
802	80						0	155	7	2	
313	31						0	162	34	23	
2,577	1,258						0	2,043	16	13	
107	11						0	31	6	11	
86	9						0	33	31	5	
313	31						0	25	10	2	

DEPARTMENT – Occupation	① U.S. Dept. of Labor – Manpower-Training Needs – Annual Ave. No. Jobs	② Md. Interim Manpower Proj. 1970-80	③ Projected Annual Need in Md.	④ 1974 Qualified Grads – All Md. Schools			⑤ 1977 Est. Quali Grads – All M Schools		
				Private	Public	Total	Private	Public	T
Marine Science									
Marine and Ocean Technician					5	5		5	
Shipfitter		–135							
Office Machine Repair									
Office Machine Repairman	3,000	437	44	3	0	3	3	0	
Office Machine Technician									
Protective Service									
Police Officer	16,600	5,336	535	0	282	282		282	2
Fireman	11,600	3,085	310	0	43	43		60	
Refrigeration, Heating & Air Condit.									
RHAC, Repairman	13,100							23	
RHAC, Technician									
Sheet Metal									
Metal Fab. Technician								20	
Sheet Metal Worker	2,300	114	12						
Sign Painting									
Sign Painter		172	17						
Supervisory									
Supervisor or Foreman	58,000	3,570	360						
Technical Writer									
Technical Writer	1,100								
Welding									
Welder	27,200	1,583	160	350		350	350		3
Welding Technician									
Upholstery									
Upholsterer	1,400	248	25	11		11	11		

(2)	(3)	(4)			(5)			(2)	(6)	(7)	(8)
. Interim anpower . 1970-80	Projected Annual Need in Md.	1974 Qualified Grads – All Md. Schools			1977 Est. Qualified Grads – All Md. Schools			Md. Total Job Openings 1976	Highest Demand Md. Employment Job Bank Openings	No. of Indust. and Scient. Firms Express Need	No. Private Schools Responding Out of State Total
		Private	Public	Total	Private	Public	Total				
			5	5		5	5				
135							0	20		1	
437	44	3	0	3	3	0	3	50			1 of 1
336	535	0	282	282		282	282	693			
085	310	0	43	43		60	60	720			
						23	23	363		6	
						20	20	76		5	
114	12						0			6	
172	17						0	31		1	
570	360						0	995		6	
							0			2	
583	160	350		350	350		350	327		5	1 of 1
248	25	11		11	11		11	58		1	1 of 1

RECOMMENDED TEN-YEAR PROJECTION OF POST SECONDARY
EDUCATION PROGRAMS TO BETTER MEET THE EMPLOYMENT NEEDS IN THE S

(Only those programs not anticipated to meet needs are listed)

DEPARTMENT – Occupational Program	Presently Offered		New Programs Approved To Be Started			
	College	Grads 1974	College	Year	Exp. Grads 1977	Co
Agriculture						
Farm Equipment Mechanic						Chesap
Blacksmith						Chesap
Allied Health (See Ex. IV-C, p. 1)						
Practical Nurse						Howar
Registered Nurse	Nine CC**	586	Howard CC	1974		Howar
Auto-Diesel – Heavy Construction Equip.						
Auto Body Mechanic						Allega
HCE Mechanic						Allega
HCE Operator						Allega
Truck Driver						Allega
Truck Mechanic						Allega
Building Construction						
Carpenter			Catonsville CC	1975	30	Howar
Floor Covering Mechanic						Howar
Mason						Howar
Painter						Howar
Plumber-Pipefitter						Howar
Business	ALL OF THE COMMUNITY COLLEGES IN MARYLAND SHOULD OFFER T					
Cabinet Making						
Cabinet Maker						Chesap
Model and Pattern Maker						Chesap
Woodcarver						Chesap

* The nine community colleges presently offering Registered Nursing should also add Practical Nursing, each graduating 36 per year.

** The nine community colleges are: Allegany, Anne Arundel, Catonsville, Community College of Baltimore, Essex, Hagerstown, Hartfort, Montgomery, and Prince George's.

N-YEAR PROJECTION OF POST SECONDARY OCCUPATIONAL
ER MEET THE EMPLOYMENT NEEDS IN THE STATE OF MARYLAND IN 1985

ly those programs not anticipated to meet needs are listed)

	New Programs Approved To Be Started			Recommended Additional Programs To Be Started			Exp. Private School Grads 1985	Total Grads Per Year In Md. by 1985	Projected Annual Need in Md.
1974	College	Year	Exp. Grads 1977	College	Year	Exp. Grads 1985			
				Chesapeake C	1976	20	-	20	18
				Chesapeake C	1977	15	-	15	?
				Howard CC*	1977	36 each 10 schools	39	399	320
86	Howard CC	1974		Howard CC	1977	60	Priv. Hosp. Grads Unknown	646	1,000
				Allegany CC	1977	20	-	20	23
				Allegany CC	1978	18	-	18	
				Allegany CC	1978	50	80	180	461+
				Allegany CC	1977	50			
				Allegany CC	1977	18		18	
	Catonsville CC	1975	30	Howard CC	1977	100		130	256
				Howard CC	1977	30		30	44
				Howard CC	1977	40		40	115
				Howard CC	1977	40		40	88
				Howard CC	1977	80		80	285
UNITY COLLEGES IN MARYLAND SHOULD OFFER THE VARIOUS BUSINESS PROGRAMS TO MEET THE NEED									
				Chesapeake C.	1977	18	0	18	7
				Chesapeake C.	1977	18	0	18	6
				Chesapeake C.	1977	18	0	18	?

ursing, each graduating 36 per year.
f Baltimore, Essex, Hagerstown,

DEPARTMENT – Occupational Program	Presently Offered		New Programs Approved To Be Started			
	College	Grads 1974	College	Year	Exp. Grads 1977	C
Distributive Occ.						
Display	Anne Arundel, Dundolk, Catonsville, CC of Baltimore, Essex, Montgomery and Prince George's CC	86	Howard CC	1975	30	Howa
Retail Management						Howa
Drafting and Engineering Tech.						
Electrical Draftsman						Howa
Mechanical Draftsman						Howa
Structural Draftsman						Howa
Technical Illustrator***						Howa
Tool and Die Design						Howa
Electrical						
Appliance Repair						Howa
Electrician						Howa
Electro-Mech. Equipment Repair						Howa
Electronics* **						
Radio-TV Repair						Howa
Hotel and Restaurant Management						
Bartender						Howa
Cook-Chef						Howa
Dietetic Assistant						Howa
Food Processing and Inspection						Chesa
Meatcutter						Chesa
Waiter-Waitress						Ches.
Instrument Repair						
Instrument Repair						Howa

*** Programs which may be considered for contracting with private schools.

1974	New Programs Approved To Be Started			Recommended Additional Programs To Be Started			Exp. Private School Grads 1985	Total Grads Per Year in Md. by 1985	Projected Annual Need in Md.
	College	Year	Exp. Grads 1977	College	Year	Exp. Grads 1985			
				Howard CC	1977	18	0	18	?
	Howard CC	1975	30	Howard CC	1977	30	0	146	490
				Howard CC	1977	25	25	50	?
				Howard CC	1977	30	50	80	?
				Howard CC	1977	18	-	18	?
				Howard CC	1977	18	-	18	?
				Howard CC	1977	18	-	18	?
				Howard CC	1977	60	-	60	130
				Howard CC	1977	75	-	75	290
				Howard CC	1978	40	-	40	60
				Howard CC	1977	40	25	65	71
				Howard CC	1977	40	-	40	61
				Howard CC	1977	100	-	100	221
				Howard CC	1978	30	-	30	?
				Chesapeake CC	1978	20	-	20	?
				Chesapeake CC	1977	30	-	30	44
				Ches. & How.	1977	150	-	150	406
				Howard CC	1978	30	-	30	?

DEPARTMENT – Occupational Program	Presently Offered		New Programs Approved To Be Started			
	College	Grads 1974	College	Year	Exp. Grads 1977	
Machine Trades						
Inspection and Quality Control Tech.						How
Machine Operator						How
Machinist						How
Maintenance Mechanic						How
Tool and Die Maker						How
Millwright						How
Set-up and Layout Man						How
Marine Science						
Marine and Ocean Technician	CC of Balt. program orient-ed to business – Misnamed					Ches
Sign Painting						
Sign Painter						How
Supervisory (Ind. Management)						
Supervisor or Foreman			Charles CC	1975	30	How
Technical Writer						
Technical Writer						How
Welding						
Welder						Alle
Welder						How
Welding Technician						Alle
Welding Technician						How
Upholstery						
Upholsterer						Alle

NOTE: All programs listed above are at the skilled craftsman-certificate level except Registered Nurse, Retail Management, Tool and Die Designer, Dietetic Assist
Set-up and Layout Man, Marine and Ocean Technology, Supervisor, Technical Writer and Welding Technician, which are at the Associate Degree level.

	New Programs Approved To Be Started			Recommended Additional Programs To Be Started			Exp. Private School Grads 1985	Total Grads Per Year In Md. by 1985	Projected Annual Need in Md.
s 1974	College	Year	Exp. Grads 1977	College	Year	Exp. Grads 1977			
				Howard CC	1978	40	-	40	40
				Howard CC	1978	80	-	80	80
				Howard CC	1978	35	-	35	31
				Howard CC	1978	100	-	100	1,258
				Howard CC	1978	18	-	18	11
				Howard CC	1978	18	-	18	9
				Howard CC	1978	18	-	18	31
				Chesapeake CC	1977	18	-	18	?
				Howard CC	1977	20	-	20	17
	Charles CC	1975	30	Howard CC	1978	40	-	70	360
				Howard CC	1977	20	-	20	?
				Allegany CC	1977	40	-	40	160
				Howard CC	1977	40	-	40	
				Allegany CC	1977	20	-	20	
				Howard CC	1977	20	-	20	
				Allegany CC	1977	20	11	31	25

d Nurse, Retail Management, Tool and Die Designer, Dietetic Assistant, Food Processing and Inspection, Tool and Die Maker, Millwright, nd Wel g Technician, which are at the Associate Degree level.

other Allied Health occupations. It is recommended that the statistics of the Maryland Comprehensive Health Planning agency be acquired and studied as soon as availbie in regard to meeting the needs of all Allied Health programs.

It is recommended that all health related occupations requiring less than four (4) years of college be the responsibility of the Maryland Community College system.

Such programs require a special core curriculum and an association with one or more approved hospitals. In general, this type of core curriculum has already been developed in several community colleges. Likewise, a number of approved hospitals are now associated with these community colleges for the practicums necessary in each discipline to the maximum capacity of the hospitals to efficiently conduct the practicums.

Where it is found that the present Allied Health occupational programs in certain disciplines are fully capable of meeting the state need, admission should be on an equal basis from all counties of the state and the tuition cost to all students should be the same by providing charge back legislation. It may well be that in some cases, such schools should be encouraged to expand their programs in certain disciplines and expand their association with more hospitals within commuting distance due to the fact that these are very expensive programs and should not be needlessly duplicated. Likewise, there is a shortage of qualified teaching personnel in the health related fields and they must be used as efficiently as possible.

If it is found that the community colleges now operating programs in special areas are unable or unwilling to expand their programs to meet the indicated demand, it is recommended that an Allied Health program in such disciplines as are needed be added to the Howard Community College, where residential facilities will be provided and additional hospitals can be found that should be willing to cooperate in these programs.

It should be noted again that the data included in Exhibits IV-C and IV-D, which is the basis for the recommendations regarding programs, is "soft data" in many cases. The consultants had assumed when starting this project that this type of data would be easily available in better form than was the case. As a result, some of the data had to be collected as part of this study. The lack of "hard" manpower data is one of the greatest weaknesses in the State of Maryland and should be corrected as soon as possible. Recommendations on this matter have been made elsewhere in this report.

2. PRIVATE SCHOOL ROLE

Private schools may well be considered for contracting in lieu of operation of the program in a community college. It would be best if the entire program would be contracted for rather than only a part of such a program. Three programs are suggested for consideration for being contracted in Exhibit IV-D. Further research may well indicate others.

The SBCC should be given authority to contract with private schools for programs where it has been determined that this would be the most efficient (less costly) and effective (best quality of education) way to meet the needs of students as well as the employment needs of the state.

Where contracting is done, the SBCC should make a determination of available housing for residence students, if this is needed. In some cases, it may be possible to house students in one of the three residential community colleges of one of the state colleges while they are attending a private school under a contracting arrangement.

3. COOPERATIVE PROGRAMS

It is recommended that cooperative employment programs be included in those occupational areas in which employers can be found that would be willing to employ such students on an alternating basis.

No cooperative program should be attempted in a field of study for which adequate provisions have not been made for the return of all such students to the school on a full-time basis as may happen in the case of a recession of employment opportunities.

A cooperative program can reduce the placement effort which must be made to see that all graduates of the program are placed in employment directly related to the program of studies.

In general, the cooperative program should only be offered during the last one-half of the student's program of studies. Some schools prefer that all cooperative students be "on campus" for the last rotation period. In this case, the rotation period may start for one of the two alternating students during the last period of the first one-half of the program of studies. Two students should alternate between the school and the same job. Thus the employer will have one full-time equivalent employee on a year-round basis.

The cooperative student shall work the regular hours required by the employer when working and shall be paid at least the minimal wage required for his work with the cooperative employer.

The employer shall cooperate with the school to see that the type of work assigned to the cooperative student employee is commensurate to the work normally completed in the later one-half of the program of studies.

The school shall have the authority to remove the student from the cooperative job with the employer when it is found that such work experience is not in keeping with the program of studies.

It is recommended that the cooperative rotation period be not less than two weeks, with a three-month rotation preferred. It is entirely feasible that cooperative programs

may involve employers located as far as one hundred miles from the school. In this case, a longer rotation period is more satisfactory, due to housing arrangements which must be made.

It is recommended that strong efforts be made to include cooperative programs in the following occupations:

Auto Mechanic
Diesel Mechanic
Heavy Equipment Operator
Carpenter
Building Superintendent
Mason
Painter
Plumber
Pipefitter
All business programs
Electrician
Electrical Repairman
Electrical Appliance Repairman
Electro-Mechanical Equip. Repairman
Office Machine Repairman
Maintenance Mechanic
Shipfitter
Sign Painter
Sheet Metal Worker
Meat Cutter
Cabinet Maker
Pattern & Model Maker
Distributive Occupations
Surveyor
Draftsman-Architectural
Draftsman-Civil
Draftsman-Electrical
Draftsman-Mechanical
Draftsman-Structural
Electronics Technician
Graphic Arts-Offset Lithographer
Instrument Repairman
Inspector-Quality Control
Machinist
Tool & Die Maker
Tool & Die Designer
Millwright
Welder
Upholsterer

4. INTERRELATIONS WITH APPRENTICESHIP PROGRAMS

It was found after talking with a number of union craft training directors that the problems of interrelations with ongoing apprenticeship programs must be worked out with each local craft union that has jurisdiction in the area in which the school is located. Any agreement reached with one local of the same craft union will not necessarily be accepted by another local of the same craft union.

It was also found that an agreement on time to be granted towards completion of an apprenticeship program by the employer and the union for the graduate of the state residential vocational technical school can only be done by the mutual understanding and cooperation between the school, the employer and the local craft union.

It is exceedingly doubtful if any local craft union or employer will agree to give any credit towards completion of an apprenticeship program at the start of such a school program of studies. If the local union and employer representatives are actively involved in a true, strong and meaningful craft advisory committee at the start of the school program of studies, some agreement may be reached to allow at least partial hourly credit to be given to such graduates as are ultimately employed as apprentices under the jurisdiction of that specific local union.

As the program develops and the local union and employer have a better opportunity to evaluate the graduates, more credit may be allowed if in their opinion such credit is warranted. The most that can be expected is that such graduates as are placed in an apprenticeship program will be granted hour for hour credit towards their apprenticeship time.

It is strongly recommended that each school craft program shall have a craft advisory committee and that the local union and employers shall be represented on this advisory committee if such craft is unionized and has an apprenticeship program.

It is also recommended that the school provide the related training for the employed apprentices in each such craft that is taught.

5. SKILL LEVELS

The qualifications for employment and job descriptions for the occupations recommended in this study generally require more than a high school education to fully qualify for employment on an entry or higher level.

The technical skill level of the graduates of such programs as are recommended to be of less than two years in length shall be that of a fully qualified worker or operative in this field.

The technical skill level of the graduates of those skill programs recommended to be of two years in duration shall be at least similar to a person who has completed an apprenticeship and is prepared with job entry level skills. The associate degree recipient will also have a background in general education and the theory of their job area which, after on the job experience, will make them good candidates for advancement to lower and middle management positions.

Those students graduating in technical programs of two years in length shall have earned an Associate in Applied Science or Associate in Applied Arts degree and shall be fully qualified as an aide or technician in that field.

G. FACILITIES, COSTS, AND FUNDING FOR PROGRAMS

1. RESIDENCE HALLS

The consultants recommend that residence facilities be developed on or near the campuses of Allegany and Howard Community Colleges and one community college on the Eastern Shore (likely to be Chesapeake Community College). In the judgment of the consultants, the following residence capacities will be needed.

	1977	1982	1989	TOTALS
Allegany Community College	100	200	300	300
Howard Community College	200	500	1,000	1,000
Chesapeake Community College	100	200	300	300
	400	900	1,600	1,600

The estimates regarding capacity are based on the assumption that about half of the students in state or regional programs at Allegany and Chesapeake will need housing and that about 30% of the students in these programs at Howard will need housing. Because Howard is in the population center, it will obviously attract more commuting students from out-of-district.

It is recommended that the residence facilities be made up of one- and two-bedroom apartment units with efficiency kitchens. This would provide a maximum space flexibility. The apartments could house married students, older and younger students, and foreign students and would permit them to be assigned by affinity groupings by apartment. The kitchens would give students a maximum amount of freedom. Because students could cook their own meals, it would not be necessary to expand current college food services. This would keep student costs down. One-bedroom units could accommodate two students and two-bedroom units could accommodate four students on the basis of two per bedroom.

The funding of residence halls could be handled in several ways. One way is to permit a private developer to build such facilities on the college campus, possibly on a lease-back arrangement, where the private corporation operates the facility and it becomes college property after 25 to 30 years. This would remove the need to use state or local funds to build the facility. If for some reason this cannot be done on campus, it may be possible to have a private developer build facilities next to the campus or on a part of the campus which may be sold to the developer.

Other options include using state funds and bonding authority to finance the facilities with the revenue from rentals being used to retire the bonds. Another possibility is to use federal funds or a combination of federal and state funds. If a new vocational technical education act includes funds for residential vocational technical facilities, some federal funds may be available. At Allegany, there maybe some Appalachian funds available. The consultants recommend that each of these possibilities be explored and that no local funds be used for residence halls unless the only way they could be obtained is to use county revenue bonding authority.

The residences should be comfortable, but not luxurious. Estimated costs for the residence halls would be approximately $6,000-$7,000 per bed. According to the Robert Snow Means Co., Inc., the current cost of constructing a two-bedroom apartment unit is approximately $16,400 in Maryland.[9] (This figure was arrived at by using their median national figure as the figure for Maryland. This has been verified as a valid figure by construction experts in Maryland.) This figure does not include architectural or land costs. Since there would be no land costs, only the architectural fees need to be added, plus the costs of equipment and furniture to furnish the apartments. Furnishings and equipment

---

9. Means Building Cost Construction Data, 1975, 33rd Annual Edition, Robert Snow Means, Inc., Construction Consultants, Durbury, Massachusetts, p. 209.

would add approximately 10% to this cost. This would bring the cost per bed in a two-bedroom apartment (four students) to approximately $5,000. Costs per bed for one-bedroom units (two students) would run closer to $7,500. The average if an equal number of one- and two-bedroom units were built would be approximately $6,250, based on current figures.

These figures are admittedly rough, but they are realistic. Construction prices have been going up over the last year about 1% per month due to inflation. However, the recession has begun to have an effect and recent bids have been very unpredictable. Some projects are well under estimates and some still come in high. In short, projecting construction costs for the future is, at present, an impossibility. The hope is that the worst of the inflation is over and that prices will stabilize.

Based on the above, the projected costs for the construction of residence facilities at the colleges are as follows:

	1977	1982	1987	TOTAL
Allegany	100 beds – $ 625,000	100 beds – $ 625,000	100 beds – $ 625,000	300 beds – $ 1,875,000
Howard	200 beds – 1,250,000	300 beds – 1,875,000	500 beds – 3,125,000	1,000 beds – 6,250,000
Chesapeake	100 beds – 625,000	100 beds – 625,000	100 beds – 625,000	300 beds – 1,875,000
TOTALS	$2,500,000	$3,125,000	$4,375,000	$10,000,000

The above figures do not project an inflation figure but some inflation is bound to occur which will increase the figures for 1982 and 1987.

The consultants recommend building the first units and then projecting additional units based on need and refined enrollment projections for the state and regional programs. There is little risk in building the initial units regarding the necessary occupancy to make them financially sound. Most community colleges now have enough students who cannot or will not live at home (in addition to the foreign students that are being attracted to community colleges) who will desire to live in these facilities if space is available. In addition, faculty and others could be allowed to rent vacant spaces should they be available. Priority for space must go first to students attending state or regional programs from out-of-district, with any remaining space going to others who desire it.

One last point needs to be made. The consultants strongly urge that costs to students be kept as low as possible and that financial aid and/or housing subsidies be available. Costs to out-of-district students, while paying in-district tuition (based on the

consultants' recommendations) still will be high when room, board, books, and transportation costs are added. The whole purpose of the recommendations in this report is to open up opportunities to students. The costs of excessively high education will simply eliminate these students. This needs to be avoided.

In the judgment of the consultants, the community colleges now have the authority to permit residence halls to be built on their campuses by private developers. They can also build such facilities through the use of county revenue bonds. If state funds are to be used, approval must be sought from the appropriate state agencies. At present, the climate is not ideal for getting such approval. Therefore, the consultants recommend exploring the use of private funds as the best practical way of implementing the above recommendations.

2. EDUCATIONAL FACILITIES

In SectionIV-F, the programs to be offered were discussed and listed in detail. ***Exhibit IV-E*** lists these programs by college. This exhibit also includes rough estimates of the spaces and equipment necessary to run the programs; the space and cost estimates were supplied to the consultants by the SBCC construction specialists, Mr. Robert DuBose and Mr. Emory Harrison.

The total space needed is estimated to be 213,201 gross square feet. The estimated cost (at today's construction figures) is $13,304,109, which includes equipment and architects fees. Exhibit IV-E includes summaries by college and shows the breakdown by program by college.

It is interesting to note that if the same programs and spaces programmed for the three residential community colleges were grouped together in a new college, the costs would rise to $29,192,946. This total does not include any costs relating to acquiring and developing an appropriate site. The supporting facilities, such as the student center, gym, library, etc., would increase the cost to more than double that recommended by the consultants. To put it another way, by assigning programs to already established colleges which have campuses and which have developed or will develop needed spaces and supporting facilities, the consultants' recommendations will save the State of Maryland approximately sixteen million dollars at today's construction costs.

The current method of financing capital projects in the community colleges in Maryland is for the state and local subdivision to share the costs on a 50-50 basis. The consultants recommend that, in the case of the three residential community colleges, the costs for construction and equipment be totally financed by the state. The regional and state programs discussed here will be for all state residents and, therefore, the local subdivision should not be asked to contribute. In addition, these programs will be high cost/low enrollment programs which no college can afford to begin under current funding arrangements.

ESTIMATED CAPITAL COSTS BY PROGRAM AND COLLEGE

COLLEGE/PROGRAM	NO. OF STUDENTS ENROLLED	LAB CAPACITY	NO. OF GRADUATES	SQUARE FEET PER STUDENT	GROSS SQUARE FEET	FURNITURE AND EQUIPMENT
Chesapeake Community College						
Farm Equipment Repair	50	25	20	120	3,900	$ 14,609
Blacksmith	35	18	15	75 - 100	2,050	3,857
Cabinet Maker	45	20	18	140	3,920	20,770
Model and Pattern Maker	45	20	18	120	3,360	6,900
Woodcarver	45	20	18	100	2,800	
Food Processer and Inspector	50	25	20	80 - 100	3,500	66,619
Meatcutter	35	18	30		2,520	
Waiter-Waitress	90	45	75	80 - 100	4,200	15,000
Marine and Ocean Technologist	45	20	18	180	*	205,600
Chesapeake Community College Totals	440	211	232		26,250	$ 333,355
Allegany Community College						
Auto Body Mechanic	25	20	20	140	*	$ 18,290
Heavy Construction Equipment Mechanic	45	20	18	160	*	101,707
Heavy Construction Equipment Operator	60	30	50	160	6,240	880,077
Truck Driver	60	30	50	driving range	744	50,000
Truck Mechanic	45	20	18	160	*	192,038
Welder	90	45	40	120	*	90,690
Welder, Technologist	50	25	20	120	*	
Upholsterer	25	12	20	960	1,248	15,000
Allegany Community College Totals	400	202	236		8,232	$1,347,802
Howard Community College						
Sign Painter	45	20	20	60	1,500	$ 5,000
Industrial Management Supervisor	100	50	40	14	1,085	
Technical Writer	45	20	20	18	560	
Welder	90	45	40	120	7,020	90,690
Welder, Technologist	45	20	20	120	3,900	

* Spaces and/or equipment for these programs are currently available or under construction and ordered.

COLLEGE/PROGRAM	NO. OF STUDENTS ENROLLED	LAB CAPACITY	NO. OF GRADUATES	SQUARE FEET PER STUDENT	GROSS SQUARE FEET	FURNITURE AND EQUIPMENT
Howard Community College, continued						
Practical Nurse	40	20	36	90 - 100	*	*
Registered Nurse	65	35	30	90 - 100	*	*
Carpenter	225	100	100	90 - 100	18,200	$ 20,770
Floor Cover Mechanic	40	20	30	18	560	5,000
Mason	100	50	40	130	8,450	3,840
Painter and Decorator	50	25	40	80	2,600	4,000
Plumber - Pipefitter	175	85	80	110	13,090	4,195
Display Advertiser (Retail)	25	13	18	70	1,274	9,000
Retail Management	65	30	30	90 - 100	4,200	10,000
Electrical Drafting	60	30	25	95	4,400	37,867
Mechanical Drafting	70	35	30	95	5,100	37,867
Structural Drafting	40	20	18	95	3,000	37,867
Technical Illustrator	40	20	18	140	4,300	42,099
Tool and Die Design	40	20	18	140	4,300	40,000
Electrical Appliance Repair	150	75	60	90	10,000	15,000
Electrician	180	90	75	100	12,600	29,298
Electro-Mechanical Equipment Repair	100	50	40	100	1,000	64,312
Bartender	45	20	40		1,600	3,500
Cook-Chef	120	60	100	100	9,000	44,302
Dietetic Assistant	70	35	30	100	5,200	
Waiter-Waitress	90	45	75	80 - 100	6,700	
Instrument Repair	70	35	30	70	4,000	21,949
Inspection and Quality Control	100	50	40	70	5,200	20,000
Machine Operator	180	90	80	160	8,480	251,089
Machinist	90	45	35	160	10,000	
Maintenance Mechanic	230	115	100	100	16,100	10,000
Tool and Die Maker	45	20	18	100	3,000	239,736
Millwright	45	20	18	125	3,500	
Set-up and Layout	45	20	18	125	3,500	
Howard Community College Totals	2,920	1,428	1,412		178,719	$1,051,381
GRAND TOTALS	3,760	1,841	1,880		213,201	$2,732,538

* Spaces and/or equipment for these programs are currently available or under construction and ordered.

Some construction funds may be secured from federal (see Appendix G) or foundation sources, but it is the consultants' judgment that this will prove to be minimal.

Howard Community College may need to rethink some of its student support spaces (lounges, Learning Resource Center, Physical Education facilities, etc.) as a result of the projections made in this study. Some may need expansion. The other two colleges can handle the increased students without significant facility modification except for adjustments for the programs themselves.

Another point needs to be made. It was mentioned earlier that some programs already existing may be designated by the SBCC as state or regional programs at colleges other than the three designated in this study. In these cases, the consultants recommend that the state consider paying the colleges the local share of construction and equipment, thereby entitling all out-of-district students to enter these programs at the in-district tuition. There may also be some programs that should be studied for possible transfer to one of the residential campuses to better serve the students in the state. These judgments should be based on SBCC staff studies and joint college concurrence.

As indicated in Section V, the state expenditures noted above will be more than compensated for by increased taxes paid by program graduates. Therefore, these expenditures should be considered in the nature of a state investment.

Additionally, it should be noted that the recent Rosenberg Commission Report shows that, while Maryland is in the top 10 states in the country in per capita income, it ranks 27th (1973-74) in per capita expenditures for higher education.[10] In short, Maryland can afford to increase its expenditures for higher education and one of the most productive means in the consultants' judgment would be the vocational technical area through the proposals included in this report.

3. OPERATING COSTS AND FUNDING

Operating costs in Maryland community colleges for each full-time equated student (FTE) are estimated to be $1,740 for 1975, according to the State Master Plan.[11] Colleges range from $1,470 at Allegany Community College to $2,310 at Garrett. In estimating costs for the programs recommended in this report, it is safe to assume that they will be more costly due to their nature and heavy reliance upon labs, equipment and supplies beyond that normally required for liberal arts courses. It is fair to assume that if the programs were to be fully operational and if students were enrolled at the consultants' projections, that cost per FTE would be approximately $1,900 (using current figures).

---

10. Op. cit., p. 32.

11. Statewide Master Plan for Community Colleges in Maryland 1973-1983, Maryland State Board for Community Colleges, State Treasury Building, Annapolis, Maryland 21404.

Based upon the enrollment figures, the additional costs for operations at Allegany Community College would be $760,000 (400 students x $1,900 per student), $836,000 at Chesapeake (440 students x $1,900 per student), and $5,548,000 at Howard (2,920 students x $1,900 per student). Costs are likely to be more per student, but less for the colleges as a whole as programs begin and as enrollment increases.

These are significant amounts. The major question that arises is how this is to be funded. Under Maryland community college law, the student can be charged no more than 22% of the cost of his education. Using $1,900 as the average cost per student, a student would be charged at most $475 per year. This is a significant amount for most students. If room, board, books, and transportation are added to this for residence students, the costs escalate to a figure that could soon reach $2,500 or more per year even with in-district tuition charges.

These costs need to be kept as low as possible. The consultants recommended earlier in this report that strong financial aid programs be developed to assist students and that the state consider housing subsidies to keep these costs as low as possible.

A major question on the above issue is how the funding should be handled for out-of-district students attending the residential programs or state and regional programs at other community colleges. Following are some options for handling this matter. We have recommended earlier that the state assume the full costs for capital and equipment costs. The options for operational costs are:

a. **A State Charge Back**

For each student in one of the state or regional programs, the state (through the SBCC) would pick up the operating costs based on their payment of 78% of the cost and the student assuming 22%. Based on an enrollment of 3,760 students, this would be an annual expenditure of $902,500 (3,760 students x $1,425 [$1,900 – $475] per student). Under current legislation, the state would pay $263,200. (See B below.)

b. **A County Charge Back**

For each out-of-district student approved by the SBCC and the residential college for admission, the student's resident county would be billed for the amount normally paid by the local subdivision. Under current legislation, the state pays 50% of the cost per FTE to a maximum of $1,400. In other words, they will pay $700 per FTE if the college can justify $1,400 or more of the expenditures per FTE. Under this proposal, the student would pay $475 (22%), the state would pay $700 (50% of $1,400) and the student's resident county would pay the balance (in this case, $725). If a county sent 50 students, their cost would be $36,250 per year, which they would pay to the residential college. If a county sent 400 students, it would cost $290,000 per year, etc.

c. State Cost Funding

Another approach to funding the operations would be for the state to pay for the actual costs of operating the state and regional programs (faculty salaries, supplies, utilities, etc.) and in return all students would have access to them at the same in-district tuition charge. This approach has merit, but would be more difficult to apply than A and B would, because a separate cost accounting system would be needed to develop the cost data upon which state reimbursement would be based. Cost estimates of this vis-a-vis the other approaches are not available.

In the judgment of the consultants, the most desirable option would be A. It is also the most feasible from a legislative standpoint, since charge back legislation which has carried a provision for charge backs to the counties such as in option B has been defeated in five consecutive legislative sessions.

Option B would be the second choice. This type of charge back may have a chance of passing the General Assembly since it is somewhat more limited than legislation that has been introduced in the past. This legislation would limit charge backs to state or regional programs specifically designated by the SBCC where as previous charge back legislation would have applied to any program at another community college not offered at a student's own college.

Option C would be a less desirable but possible alternative if A and B proved to be out of the question.

One last point. Students from counties which do not have community colleges could be permitted to attend one of the residential colleges for any program under a modified charge back plan based on either option A or B. This may be more desirable than establishing new colleges or satellite centers of existing colleges in these more sparsely settled areas of the state.

V. COST-BENEFIT ANALYSIS

Average salaries for various occupations are listed in the 1972 Occupational Handbook, U. S. Department of Labor. Since that time non-production skilled maintenance and technical workers in the Maryland-Washington area have had average increases in salary of 8.2% from 1972 to 1973 and 11.0% in the 1973-74 year. The average production manufacturing worker increased 9.9% from 1972 to 1973, 8.6% from 1973 to 1974, and 10.5% from 1974 to 1975. Unskilled labor wages increased 5.8% from 1972 to 1973 and 5.1% from 1973 to 1974.[1] It can well be determined from these figures that the wages of skilled and technical personnel are gaining at nearly 5% per year over unskilled labor.

Part I of this study indicated that a graduate of a two-year post high school vocational technical program may well earn $450,000 in his lifetime (a very conservative calculation). Labor statistics based on the above increases in salary over the past three years indicate that this amount has increased by approximately 9.5% to $492,750, which also increases the amount of county, state and federal taxes paid to at least $39,171 more than the average high school graduate.

	LIFETIME EARNINGS	YEARLY AVERAGE EARNINGS	NUMBER OF YEARS	AMOUNT OF FEDERAL TAX PER YEAR
High School Grad	$335,720	$ 7,460	45	$ 407.00
Residential Voc Tech Grad	499,500	11,100	45	1,004.50

$ 407.00		$ 1,004.50
x 45		x 45
$18,315.00	– Lifetime Federal Income Tax –	$45,202.50

	COUNTY INCOME TAX*	MARYLAND INCOME TAX*
High School Grad	2½% of $335,720.00 = $ 8,393.00	5% of $335,720.00 = $16,786.00
Residential Voc Tech Grad	2½% of $499,500.00 = $12,487.50	5% of $499,500.00 = $24,975.00

* Source: Maryland State Income Tax Office

	HIGH SCHOOL GRAD	RESIDENTIAL VOC TECH GRAD
County Tax	$ 8,393.00	$12,487.50
Maryland State Income Tax	16,786.00	24,975.00
Federal Income Tax	18,315.00	45,202.50
Total Taxes Paid	$43,494.00	$82,665.00

AMOUNT OF TAX PAID BY RESIDENTIAL VOC TECH GRAD OVER HIGH SCHOOL GRAD = $39,171.00

1. Latest available figures from Mr. Hoffman, U.S. Department of Labor, Research Division, Area Labor Statistics, Wash., D.C.

The recommendations as shown in Exhibit IV-D indicate a total of 1,940 graduates. Thus, the return of $39,171 per student multiplied by 1,940 indicates a return of $75,991,740 in county, state and federal taxes during the lifetime of these graduates over that received from high school graduates.

The operating cost to the state and county is based on the operating cost of $1,900 per year per student with the student paying 22% or $418. Thus, the cost to the state and county for operation would be $1,482 per student per year or $2,964 for a two-year program. Thus,

$ 2,964	Per two-year graduate
x1,940	Graduates
$5,750,160	Operating cost to county and state for 1,940 two-year graduates

The capital costs to the state and county calculated on the basis of recent bond obligations of the State of Maryland as quoted by Mr. Paul Rodler of Folger Nolan Fleming Douglas, Inc., of Washington, D. C., for the estimated total capital cost of $15,734,588, amortized over 25 years at 6.5% would total $41,303.963.

Since it is planned to graduate 1,940 students per year over the same 25 years for a total of 48,500 graduates, the estimated capital cost per graduate over the 25 years would be $857. By multiplying $857 times the 1,940 graduates per year, we find that the amortized capital cost per year is $1,657,880, and by adding to this the total operating cost to the state and county of $5,750,160, we have the total cost per year of $7,408,040 to the state and county. By dividing the 1,940 graduates per year into the $7,408,040, we find the total cost to state and county is $3,813 per graduate for operations and capital amortization.

By subtracting the $3,813 cost per graduate from the expected additional tax return by each such graduate of $39,171, it is found that the county, state and federal taxes received will exceed those of high school graduates by $35,358 per graduate after all post high school education costs for this group have been paid. Thus, it is apparent that the proposed program is economically justified.

VI. ADDITIONAL RECOMMENDATIONS

It is normal in the case of an extensive study such as this one to develop thoughts and ideas on matters that tangentially relate to the central focus of the study. This has been the case in this study. In order to share those further ideas and recommendations, the consultants have listed below some of the items which in their judgement are very significant to the success of a viable residential vocational technical program.

A. LOCAL COUNCILS OR ADVISORY GROUPS ON VOCATIONAL TECHNICAL EDUCATION

The Rosenberg Commission report, cited earlier, recommends (on page 72) that each local board of education establish an advisory council from members of local business, industry, government and education to help interface with the educational system, develop cooperative programs, etc. The Maryland Advisory Council on Vocational Technical Education has made the recommendation for local advisory groups with responsibilities similar to theirs but on a local level. The consultants support and recommend the development of viable local advisor groups to advise the high schools and community colleges on needed programs in vocational technical education and to stimulate a close cooperation between the educational experience and the realities of the job world.

B. PUBLICIZING VOCATIONAL TECHNICAL PROGRAMS

It is axiomatic that to have successful vocational technical programs, you need capable students, effective programs, and jobs for the graduates. In order to get capable students, available programs must be publicized. At present, many students are unaware of programs offered in other parts of the state to which they could go. The SBCC staff develops and distributes a document to all high schools concerning available vocational technical programs in the community colleges, but more needs to be done. The consultants recommend that all community colleges be required to list in their catalogs vocational technical programs available in the state which they do not offer, along with instructions on how students can obtain more data on those programs.

C. EDUCATIONAL VOCATIONAL COUNSELING

The educational vocational counseling received by many students in Maryland is weak and ineffective. A comprehensive study should be made concerning how to improve the counseling students receive at both high school and community college levels. A number of groups have recognized this need and are making recommendations for improvement. Some students seem to be counseled out of vocational programs when they

should be in them and others into them when they should not be there. Significant improvement needs to be made both in the assessment of students' interests, skills, aptitudes, etc. (mentioned earlier in this report), and in the counseling of students regarding the realities of the working world.

D. RELATIONSHIP OF SBCC AND MACVTE

The consultants feel very strongly that the SBCC and MACVTE should be more closely related, particularly if the residential vocational technical centers are created following the recommendations in this study. We recommend that one or more of the following recommendations be considered and implemented by both bodies:

- *The executive directors of each body schedule regular meetings, perhaps quarterly, to share data of mutual concern.*
- *The executive director or chairman of each body be appointed as an ex officio member of the other body in order to coordinate roles.*
- *The minutes, agendas and regular mailings of each body be shared with the executive directors of the other.*
- *The two groups schedule at least one joint meeting a year to discuss nothing but vocational technical education at the post secondary level. This meeting could be arranged so that the MACVTE annual report would be the focus of the meeting.*

E. FURTHER STUDIES

Two areas will need further study in the near future and should be considered for special projects. First, as was mentioned earlier, a study of vocational technical education needs at the high school level should be initiated in two to three years and the possibilities of residential centers at this level should be explored. Secondly, it is important for the State of Maryland to take a look at vocational technical programs requiring a Bachelors degree or above for entrance, the adequacy of current programs, the assignment of future programs, the possible selection of one or more current state colleges or the University of Maryland to focus on this form of advanced education and other related matters should be studied and appropriate recommendations made for taking care of this segment of higher education which will increase in importance in the future.

The concept of career ladders is a viable one and provides that students may start on the lower end of a career ladder and move to higher levels in their vocation throughout their lives with added education and experience. This study deals with a number of

areas in which career ladders are possible. The recommendation to study technical education above the two-year level really relates to the State of Maryland looking at the higher levels of vocational technical education (beyond two years post high school) to ensure that the education is being offered which will permit qualified citizens to pursue a viable career ladder for themselves within the State.

F. INTERSTATE COMPACTS FOR VOCATIONAL TECHNICAL EDUCATION

The Heller Report of 1970 focused attention on and made recommendations regarding "reciprocity" between states.[1] This development of interstate compacts which provide that students from one state may go to a neighboring state to take a program not offered in their area without paying out-of-district or out-of-state fees are becoming increasingly popular and can save states considerable amounts of money as well as better serve the educational needs of their students. The consultants strongly urge the state to stimulate dialog leading to such compacts. There is particular need for such dialog between Maryland and West Virginia and Maryland and Pennsylvania. These could have a significant impact on Allegany Community College. Reference to Exhibit IV-B indicates that a thirty-mile radius around Allegany includes much of these two states. Many students in these states could easily attend Allegany. There are also programs in Pennsylvania community colleges which are close to Maryland students, particularly in the western end of the state.

Compacts should also be considered with Delaware and Virginia, both of which have community college systems with a strong vocational technical orientation. The District of Columbia should also be considered for such an agreement.

Efforts were made at one time to do this and for some reason were dropped. However, the need for each state to make its educational dollar go further and the convenience of such a program should rekindle the spark and lead to new efforts to conclude the necessary interstate agreements.

---

1. Years of Growth - The Outlook for Maryland's Higher Education Facilities Needs, M.C.H.E., Robert Heller Associates, Inc., April 1970, p. 44.

VII. PLAN OF ACTION

In order to put the recommendations of the consultants into effect, certain actions need to be taken. The consultants recommend that the following steps be considered by the MACVTE in implementing the recommendations. Many of these steps relate to matters to be carried out by the SBCC and its staff.

- *Meet with the SBCC to discuss this study and its implications.*

- *Develop a joint committee with SBCC to draft, sponsor, and work for passage of legislation to provide the SBCC with the authority it needs to (1) designate regional and state programs, (2) fund residence halls, and (3) fund regional and state programs, thereby providing the charge back feature mentioned earlier.*

- *Develop with the SBCC a program for closer coordination between the groups, perhaps along the lines of the consultants' recommendations in Chapter V.*

- *Develop a joint strategy with the SBCC to push for a more effective state manpower data collection and dissemination mechanism.*

- *Develop a plan with the SBCC for stimulating the development of interstate compacts relating to post high school vocational technical education.*

The SBCC, through its staff, will need to do the following:

- *Study and recommend the best funding formula for the regional and state programs.*

- *Develop recommendations regarding the funding of residence halls and develop whatever procedures or devices are necessary to carry this out.*

- *Hold discussions with the colleges recommended in this study as residential centers and develop guidelines and understandings for operations of the system on these campuses as well as the charge back system which would involve other community colleges.*

- *Review and refine the program recommendations in this study and make allocation of programs for the future.*

- *Study again the Eastern Shore situation in six to twelve months and make a final recommendation regarding which college should be the residential center for the Shore area.*

- *Assist Howard Community College in gaining priority for the building of a vocational technical center to house programs approved for that institution.*

- *Recommend procedures and policies (and new legislation, if needed) to permit the SBCC to contract with private schools if this is thought to be the most efficient and effective way to meet the educational needs of students and the employment needs of the state.*

- *Investigate existing interstate compacts and develop a model or two for state consideration.*

VIII. SUMMARY AND CONCLUSIONS

McManis Associates, Inc., has carried out a two-part study for the Maryland Advisory Council on Vocational Technical Education (MACVTE). The first part of the study involved assessing whether there were unmet vocational technical education needs in the State of Maryland which could relate to the establishment of one or more residential vocational technical centers.

It was the conclusion of the consultants that this was indeed the case. The data supporting this conclusion is found in Part I of our report delivered to the MACVTE. Based on the data in Part I, the MACVTE authorized Part II of the study which was designed to make specific recommendations regarding the shape and form, costs, programs, enrollments, facilities, and other details of the residential vocational technical education.

McManis Associates concluded Part II of the study and has made the following recommendations which the consultants believe are the most effective and feasible that could be made at this time and which will satisfy the vast majority of needs uncovered in Part I of the study:

1. *That the post high school vocational technical education needs be met through the currently existing community college system.*

2. *That three community colleges be designated as residential centers (Allegany, Howard, and one on the Eastern Shore to be named later).*

3. *That the State Board for Community Colleges (SBCC) be given authority to (1) designate regional and state programs qualifying them for full state funding and opening them to all state students at the in-district tuition rate (except for students whose county community college already has such a program), (2) contract for special programs with private schools where this would be more efficient and effective for the state, and (3) fund residence halls with state funds, if necessary, at the three community colleges approved for them.*

4. *That the SBCC study the situation on the Eastern Shore in six to twelve months and designate one of the colleges as the residential center for that area. If the situation remains unchanged, the consultants recommend the designation of Chesapeake Community College.*

5. *That the administration of the three residential vocational technical centers be left to the local board currently responsible for the colleges.*

6. *That each college develop or affiliate with an existing assessment center to provide the necessary testing and evaluation to properly place students (including handicapped) in appropriate programs.*

7. *That the three colleges make special provisions for serving handicapped students who qualify to take their programs and that new and existing facilities make full provisions for handicapped students.*

8. *That the state and regional programs be studied carefully so that as many as possible may be developed as cooperative programs.*

9. *Where apprenticeship programs exist, that every attempt be made to coordinate with the appropriate officials so that a maximum amount of credit can be granted toward the apprenticeship.*

10. *That local advisory groups be established for each college to interface with local business, industry, government, and educational agencies in order to insure a flow of information and maximum cooperation.*

11. *That all community colleges be required to list in their catalogs all vocational technical programs that they do not offer along with details on how students can secure further information on them.*

12. *That residence halls be of the apartment type, modest in design, and funded from private sources if possible, and that costs to the students be kept as low as possible.*

13. *That the three residential colleges be required to provide adequate placement, counseling, and housing services to properly serve the residential students.*

14. *That the SBCC and local colleges investigate several federal funding possibilities in order to reduce costs to the state and local district for facilities and operating costs (see Appendix G).*

15. *That approximately forty new programs be started or expanded over the next ten years in the residential colleges.*

16. *That the colleges serve an age group of roughly 17 to 65 allowing exceptional high school students to enter programs if they are qualified to do so and can pass proper assessment exams.*

17. *That the SBCC contract with private and proprietary schools for some vocational technical programs if this is found by proper study to be more*

effective and economical than starting a new program in a community college.

18. *That the MACVTE and the SBCC provide for regular closer working relations and schedule at least one joint meeting annually.*

19. *That future studies be aimed at assessing the high school level need for residential vocational technical education and the needs for such education at the four-year degree level and above.*

20. *That the state designate one state agency as being responsible for developing and providing relevant manpower information and that such an agency be staffed and funded to do an adequate job.*

21. *That the State of Maryland develop interstate compacts with Pennsylvania, West Virginia, Delaware, Virginia and the District of Columbia providing for the reciprocity of students in post high school vocational technical programs.*

In closing, McManis Associates, Inc., would like to express their appreciation for the excellent cooperation received from the many people who assisted in this study. Special thanks goes to Mr. Michael Morton, Executive Director of the MACVTE, the members of the Residential Subcommittee of the Council (Mr. Jack Lancaster, Mr. Donn Aiken, Mr. Robert Cook, Dr. Jean Hebeler, Mr. George Lechlider, Mr. Sid Cernak, and Mr. Lenwood Ivey), and the individual council members.

APPENDIX A

QUESTIONNAIRE SENT TO PRIVATE VOCATIONAL TECHNICAL SCHOOLS

– PRIVATE SCHOOL QUESTIONNAIRE –

Name of School _____ Street Address _____ City and Zip Code _____ Founding Date _____

Does your school have residential facilities? ____yes ____no If yes, what is the residential capacity? _____ How many current vacancies? _____

I. Please list below your current programs along with the data related to them.

	Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)*	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
a.								
b.								
c.								
d.								
e.								
f.								
g.								

II. Are you interested in contracting with the State of Maryland for one or more programs if this can be arranged? ____yes ____no If no, go to question V. If yes, proceed to question III.

III. List (by letter from question I) any programs you could and would like to contract: _____

IV. Are there any programs which you currently do not offer which you could easily add should the state wish to contract with you to train a number of students? Please list programs. If none, check here _____

_____ _____ _____

_____ _____ _____

* Please list additional full-time students you could handle in the program without adding facilities or equipment.

V. Do you personally know any job areas where employment needs exist but because of cost or other factors you cannot or do not wish to develop a program to train people for these jobs? If so, list the program or job area.

_____ _____ _____

_____ _____ _____

VI. Are there any programs listed in question I where the availability of students and jobs is so plentiful that you **would not object** to additional competition from a state institution offering such a program?

If so, list by letter any such programs _____ If none, check here _____

Please place the questionnaire in the stamped self-addressed envelope enclosed.
Thank you for your assistance.

APPENDIX B

RESULTS OF QUESTIONNAIRE SENT TO PRIVATE VOCATIONAL TECHNICAL SCHOOLS, CATEGORIZED BY BEAUTY SCHOOLS AND OTHER SCHOOLS

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Beauty Schools

Number Responding – 10

Does your school have residential facilities?

Yes 2 No 8

II. Are you interested in contracting with the State of Maryland for one or more programs if this can be arranged?

Yes 10 No 0

III. List (by letter from question I) any programs you could and would like to contract:

Most schools wishing to contract listed all or nearly all of their programs.

IV. Are there any programs which you currently do not offer which you could easily add should the state wish to contract with you to train a number of students?

Yes 5 No 5

1. Cosmetology
2. Post-graduate classes for hairdressers
3. Advanced Hairstyling
   Advanced Chemistry of Prod. Used
   Men's Hairpieces & Styling
   Men's H.P. and Wigs
4. Wig Stylist
   Cosmetician
5. No course(s) indicated

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

V. Do you personally know any job areas where employment needs exist but because of cost or other factors you cannot or do not wish to develop a program to train people for these jobs? If so, list the program or job area.

Yes 1 None 9

Advanced Hairstyling

Wigs and Hairpieces – Men

Men's Hairstyling

VI. Are there any programs listed in question I where the availability of students and jobs is so plentiful that you *would not object* to additional competition from a state institution offering such a program?

Yes 0 None 10

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

I. Name of Program	Length of Program	Current Enrollment Head Count	Current Enrollment Full Time	Current Enrollment Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Cosmetology	39 wks.	24	22	2	41	26	19 now working
Cosmetology	10 mos.	9	8	1	25	4	2
Cosmetology (operator)	1500 hrs.		15		50	21	18
Cosmetology (Jr. Mgr.)	2000 hrs.		3		15	2	2
Co..n. Teacher	2500 hrs.		0		3	0	0
Cosmetology (Operator)	9 mos.	57	37	20	70	26	20
Operator	1500 hrs.	56	39	17	80	17	17
Manicurist	100 hrs.	0	0	0	5	3	3
Jr. Manager	500 hrs.	4	4	0	4	3	3
Jr. Teacher	500 hrs.	3	3	0	3	2	2
Operator	9 mos.	6	3	3	20	6	5
Jr. Manager	13 mos.	3	3	-	3	0	-
Jr. Teacher	16 mos.	1	1	-	1	1	1
Manicurist	1 mo.	0	-	-	3	-	-
Cosmetology Operator	1500 hrs.	25	20	5	40	20	Unavailable
Jr. Manager	500 hrs.	1	1		2		
Jr. Teacher	1000 hrs.	0			2	2	2
Beauty Operator	1500 hrs.	26	24	2	50	10	9
Beautician, Jr. Manager	2000 hrs.	27	25	2	50	8	6
Jr. Teacher	2500 hrs.	2	2				
Cosmetology	9 mos.	22	22	10	50	60	All graduates
Jr. Teacher	2500 hrs.						
Jr. Manager	2000 hrs.						
Cosmetology	9½ mos.	30	23	7		21	18

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Other Schools

Number Responding – 28

Does your school have residential facilities?

Yes 6 No 22

II. Are you interested in contracting with the State of Maryland for one or more programs if this can be arranged?

Yes 25 No 3

III. List (by letter from question I) any programs you could and would like to contract:

Most schools wishing to contract listed all or nearly all of their programs.

IV. Are there any programs which you currently do not offer which you could easily add should the state wish to contract with you to train a number of students?

None 11

Any drafting related courses
Tape Librarian and Control Clerk
Mechanical Drafting
Structural Drafting
Civil Drafting, etc.
Radio and TV Servicing
Electrician, all phases of computer, communications, etc.
Electronics Servicing
Preparation for GED
Reading Skills
A&P Mechanics Course
Stenotype

Any kind of remedial/education program
Any kind of clerical program
Architectural Drafting
Architectural Rendition
Pharmacy Assistant
Veterinary Assistant
Any program for class size project designed to State's specifications and dealing with trucks or engines, whether gas or diesel, body and fender or driving
Court Reporting-Stenography
Business Accounting
Fashion and Retail Management
Basic Electronics Training
Digital Computer Operations
Digital Electronics Training
Radio-TV-Color TV Servicing
Basic Electricity
Basic Electronics
Electronic Soldering and Assembly
Basic Radio Service
FCC Operating Licensing Preparation
Fundamentals of Electronic Drawing
Industrial Electronics
FCC Advanced Engineering Licensing Preparation
Typography
Lithography

V. Do you personally know any job areas where employment needs exist but because of cost or other factors you cannot or do not wish to develop a program to train people for these jobs? If so, list the program or job area.

Yes 8 No 4 No Answer 16

Tape Librarian and Control
Clerk
Machinist
Machine Operator

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Data Processing
Architectural Drafting
Architectural Rendition
Commercial Photography
Photo Retouching
Advertising Copywriter
TV Graphics
Animation
Typography
Welding
Auto Mechanics
Nursing Aides or Assistants (who will go into homes of people after they leave the hospital, much as "practical nurses" used to do 25 years ago. I have constant calls for such people)

VI. Are there any programs listed in question I where the availability of students and jobs is so plentiful that you *would not object* to additional competition from a state institution offering such a program?

Yes 2 None 26

Practical Nursing
Electronic Engineering Technology
Practical Electronic Servicing

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Practical Nursing	12 mos.	22	22	-	30	21	14 – All who desired placement
Electronic Engineering Technology	96 wks.		150	n/a	200	57	55
Practical Electronic Servicing	48 wks.		25	n/a	50	19	15
Color TV Servicing	52 wks.			25			
Fine Arts	2 yrs.	160	8	152	50	4	2
Visual Communications	2 yrs.	66	10	56	50	3	3
"3-in-1"	1200 hrs.	67	35	32	60	10	96%
Production	300 hrs.	2	1	1	1		
Prof. Cartooning	400 hrs.	4	0	4	1		
Executive Sec.	12 mos.	10	10	-	10	5	3
Legal Sec.	12 mos.	2	2	-	18	New 1/75	0
Medical Sec.	12 mos.	6	5	1	15	6	5
Accounting Clerk	12 mos.	4	3	1	17	7	6
Stenographer Clerk	12 mos.	3	2	1	18	7	7
General Office Clerk	9 mos.	2	2	-	18	3	2
Commercial Art	500 hrs.	4	0	4	10	5	4
Advertising Design	300 hrs.	3	0	3		1	1
Fashion Illustration	300 hrs.	0	0	0		1	0
Interior Design	300 hrs.	2	0	2		0	0
Fine Arts	200 hrs.	3	0	3		2	0
Commart - Adv. Des.	800 hrs.	3	0	3		0	0
Electronics	48 wks.	52	38	14	100	13	13
Architectural Drafting	48 wks.	56	41	15	100	8	7
Computer Programmer	14½ mos. F/T 18 mos. P/T	150	81	69	225	40	34 (80%)
Computer Operations	11 mos. F/T 17 mos. P/T	31	13	18	75	23	17
D/P Repair	12 mos. F/T 18 mos. P/T	38	18	20	50	3	2

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Key Punch	10 wks.	38	26	12	35	34	85%
Computer Secretary	9 mos.	6	6		20-25	0	
Engineering Drafting Tech.	1200 hrs.						
Mechanical Drafting Tech.	900 hrs.				100		
Architectural Drafting Tech.	900 hrs.	200	100	100		150	130
Specialized Architectural Drafting	400 hrs.			P/T only			
Specialized Mechanical Drafting	400 hrs.			P/T only			
Barbering	1500 hrs.	60	30	30	60	40	40
Executive Secretarial	48 wks.		5		10	4	4
Secretarial	36 wks.		6		10	8	8
Secretarial	24 wks.		3		10	5	4
Basic Office	24 wks.		8		15	5	3
Individual	12 wks.			50			
Entry Deep Sea	3 mos.	146	146		150	446	446
Entry Inland Waterways		55	55		70	182	182
Upgrading	2 wks.-6 mos.	75	75		100	620	
Recertification	2 mos.	12	12		12	144	144
Seniority Upgrading	1 mo.	6	6		6	64	
Private Pilot	3 mos.	21			Unlimited	15	
Commercial Pilot	1 yr.	15			"	10	
Instrument Pilot	6 mos.	5			"	11	
Flight Instructor	6 mos.	8			"	12	
Instrument Flight Instructor	6 mos.	8			"	8	

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Executive Secretarial	12 mos.	24	24			8	
Medical Secretarial	12 mos.	23	23			6	
Legal Secretarial	12 mos.	22	22			7	
Private Secretarial	9 mos.	14	14		300	16	100%
Junior Accounting	9 mos.	21	21			3	
Dictaphone Secretarial	9 mos.	3	3			3	
Stenographic Course	6 mos.	18	18			9	
Secretarial	7 mos.						
Clerk-Typist	3 mos.						
Stenoscript	8-12 wks.						
Transcription Typist	4 mos.						
Typing							
Keypunch/ Clerk Typist	5 mos.						
Keypunch Verification	8 wks.						
Bookkeeping/ Clerk Typist	4 mos.						
Medical Receptionist	4 mos.	117	92	25	Double present enrollment	196	129
High School Equiv. Certification Prep.							
Refresher Courses							
Office Machine Service and Repair	370 hrs.						
Small Appliance Repair	200 hrs.						
Marine Engine Repair and Service	205 hrs.						

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Current Enrollment Full Time	Current Enrollment Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Air Conditioner Repair Reading Improvement Mathematics of Business Accounting Essentials	370 hrs.						
Medical Assisting	28 wks.	75	75		250	150	142
Dental Assisting	16 wks.	35	35		250	150	136
Medical/Dental Receptionist	16 wks.	22	22		250	96	95
Practical Nursing	52 wks.	20	20	n/a	32	20	19
Diesel Technician	520 hrs.	30	30			89	80%
Marine Diesel Diagnostic Program	30 hrs.	8				12	n/a
Sanitation Truck Driver	4 wks.	None					
Construction Truck Driver	4 wks.	None					
Auto Service Mechanics	17 wks.	15	15	0	15 (20)	26	24
Drafting	7.5 mos.-2 yrs.		23	23	45	24	20
Secretarial	4-72 wks.		11	70	50	176	124
English as a Second Language	48 wks.			60	120	63	n/a
Electronic Technology	18 mos.	36			120	19	
Electronic Servicing & Communications	2 yrs.	31					

– PRIVATE SCHOOL QUESTIONNAIRE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Engineering Drafting	1250 hrs.	10					
Adv. Eng. Dg.	1250 hrs.						
Tool Design and Layout	1250 hrs.	3			25	8	
Architectural	1250 hrs.	3					
Structural	1250 hrs.						
Remedial Math	400 hrs.	5					
Secretarial	38 wks.	47			107	44	43
Clerk Typist	18 wks.	11			71		
Typing and Shorthand	12+ wks.	26					
English – Foreign	16+ wks.	48					
Bilingual	38 wks.	11					
Typing and ABC	17 wks.	22					
Bookkeeping	15 wks.	9					
Executive Sec.	16-18 mos.	3	3	0		0	
Medical Sec.	14-16 mos.	4	4	0		1	1
Secretarial	12-15 mos.	12	12	0		12	12
Accounting Business Administration	12-14 mos.	15	14	1		13	10
Stenographic	8-9 mos.	10	8	2		4	3
Clerical	6-8 mos.	15	15	0		15	13
Secretarial	9 mos.	35	35		50	30	30
Stenographic	9 mos.	25	25		50	25	18
Clerk-Typist	9 mos.	10	10		25	15	9
Preparation for Deck Officers Licenses in U.S. Merchant Marine	8-16 wks.	14	14		24	67	
Automotive Technology	36 wks.	212	118	94	25	157	96
Engine Tune-up	12 wks.	6	1	5		11	8

– PRIVATE SCHOOL QUESTIONNARIE SUMMARY –

Continued

Name of Program	Length of Program	Current Enrollment Head Count	Full Time	Part Time	Capacity of Program (Full Time)	Number Graduating 1974	Number of 74 Grads Placed in Jobs Related to Training
Automatic Transmissions	8 wks.	1	0	1		6	4
Automotive Air Conditioning	4 wks.	2	0	2		15	10
Air Conditioning Refrigeration and Heating	40 wks.	82	49	33		10	5
Heating Systems	12 wks.	0	0	0		-	-
Automotive Technology	48 wks.	89	89	0			
Automotive Mechanics	32-75 wks.	129	46	83			
Scientific Engine Tune-Up	15-37½ wks.	8	2	6	225	136	86
Automatic Transmissions	10-25 wks.	20	4	16			
Automotive Air Conditioning	5-12½ wks.	9	7	2			
Computer Technology	6 mos.	100	69	31	90	141	117
Computer Programming	6 mos.	61	29	32	60	65	38

APPENDIX C

MEMORANDUM SENT TO 1,088 INDUSTRIAL AND SCIENTIFIC FIRMS IN MARYLAND EMPLOYING FIFTY OR MORE PEOPLE

– MEMORANDUM –

DETERMINATION OF NEED FOR A RESIDENTIAL VOCATIONAL-TECHNICAL SCHOOL

The Maryland State Advisory Council for Vocational-Technical Education has employed McManis Associates, Inc., to determine whether there is a need for a residential vocational-technical school(s) in the State of Maryland and, if so, what programs it should offer.

The results of the first phase of our study show that there *is* a need for such a school(s). It is not expected that it would be in direct competition with any other school or college in Maryland since indications are that many youths drop out of school or fail to further their education beyond high school because they are unable to find a school offering the programs they desire. There appears to be a lack of vocational-technical educational opportunities for out-of-school youths, high school graduates, and unemployed adults in Maryland.

Information obtained in Part I of the study, including data gathered from a sampling of industrial and scientific firms in Maryland, and information obtained at a conference with a representative group of these firms fully support the need for a vocational-technical school. Evidence indicates that no direct educational program is being offered in the state for a large number of semi-skilled, skilled, and technical jobs, such as millman-woodworker, millwright, tool and die maker, tool and die designer, wood and metal patternmaker, technical illustrator, sign painter, ceramic-glass-metal technician, production control technician, metal fabrication technician, model maker, and various office positions.

You could assist us greatly in the development of this program by listing those occupations requiring less than four years of college for which you company has difficulty in locating trained manpower. Please do not overlook those newer or developing job classifications for which you see a growing need.

Enclosed is a self-addressed stamped envelope. We would appreciate very much receiving your response by March 22nd. Thank you for your cooperation.

McManis Associates, Inc.

Kenneth E. Carl
Senior Associate

APPENDIX D

RESULTS OF MEMORANDUM TO INDUSTRIAL AND SCIENTIFIC FIRMS IN MARYLAND EMPLOYING FIFTY OR MORE PEOPLE

RESULTS OF MEMORANDUM TO INDUSTRIAL AND SCIENTIFIC FIRMS IN MARYLAND EMPLOYING FIFTY OR MORE PEOPLE

The memorandum (Appendix C) was sent to all companies employing fifty or more people as listed in the 1973-74 Maryland Manufacturers Directory and the 1974-75 Maryland Directory of Sciences Resources to ascertain their unmet needs for trained personnel requiring less than four years of college.

This memorandum was mailed in March, 1975, at a time when our national unemployment rate was 8.2%. As was expected, the number of usable returns was small (63). The replies received indicated that even though there was a deep recession, there were many jobs open for trained and educated personnel in entry level and above positions.

The memorandum was returned unopened from forty-seven other firms stating that the addressee had moved or retired, or that the company was no longer in business. This brought the total of usable and unusable returns to 110.

Fifty-nine of the sixty-three replies indicated a strong feeling by these firms in favor of a residential vocational technical school. One firm stated that they would like to add a third shift in their plant, but could not find the necessary number of machinists to fill the requirement.

For a listing of occupations named as an unmet need with the 59 firms, see Exhibit IV-C, "Selected Post-Secondary Occupational Education Programs in Maryland."

In a sampling survey made by the American Tool and Die Makers Association in cooperation with the Maryland Tool and Die Makers Association, it was found that, of eighteen plants recently surveyed in Maryland, 130 tool and die makers were needed. Thus, it can be assumed that at least 300 tool and die makers were needed at that time in Maryland.

It should be noted that tool and die makers are not included in the Job Bank listing of the Maryland Department of Employment and Social Services (Appendix E). The only reason that can be given is that firms desiring to employ tool and die makers (and other highly skilled and technical workers) have not had much if any success in recruiting such personnel through the Department of Employment and thus resort to their own want ads or use private employment agencies.

Twenty-four of the twenty-five occupations named in the Job Bank listing (Appendix E) were also named by the 59 industrial and scientific firms in their replies. Column 7 of Exhibit IV-C shows the number of firms that expressed a need for each such occupation.

APPENDIX E

LETTER FROM MARYLAND DEPARTMENT OF EMPLOYMENT AND SOCIAL SERVICES LISTING JOB BANK OPENINGS LISTED FOR 100 DAYS OR MORE

DEPARTMENT OF EMPLOYMENT AND SOCIAL SERVICES
OFFICE OF PROGRAM PLANNING AND EVALUATION
1100 NORTH EUTAW STREET
BALTIMORE, MARYLAND - 21201
(301) 383-5647

MARVIN MANDEL
GOVERNOR

ROGER P. WINTER
ASSISTANT SECRETARY

Richard A. Batterton
SECRETARY

March 21, 1975

Mr. Kenneth E. Carl
McManis Associates, Inc.
1120 Connecticut Avenue, N.W.
Washington, D. C. 20036

Dear Mr. Carl:

In an effort to supply information which you requested regarding 25 occupations in the highest job demand classification, this agency has found itself at a considerable disadvantage. Data available to us with respect to jobs that are difficult to fill cannot easily be related to a shortage of suitably trained applicants. Very frequently job orders we receive specify undesirable working hours, particular types of experience, or wage rate which do not appeal to job applicants.

The best we can do is to single out jobs which stay on the Job Bank for a considerable period of time without being filled. The Job Bank contains all the orders listed with the Employment Security Administration. We have reviewed the current Job Bank listing and have selected those occupations which show a substantial number of openings from orders which have been on the Job Bank 100 days or more. We list those job titles and the number of unfilled openings for each title.

Job Title	# of Openings	Job Title	# of Openings
Secretary	7	Auto Mechanic	8
Electronic Technician	30	Maintenance Mechanic	16
Mechanical Draftsman	9	Millwright	31
Detailer	11	Assembler	9
Nurse, General Duty	7	Electronic Technician,Auto	7
Field Engineer	7	Seamstress	7
Stenographer	6	Shipfitter	20
Steno-Clerk	15	Electrician	7
Clerk-Typist	18	Stationary Engineer	7
Key Punch Operator	8	Programmer	5
Machinist	34	Draftsman	7
Tool Machine Setup Oper.	10	Carpenter	7
Engine Lathe Operator	7		

In addition, we are enclosing projections for the Baltimore Metropolitan Area and the State of Maryland which have been developed from the industrial-occupational matrix. These projections are based on 1970 census data and the growth in industry during the years since 1970. The projections are for 1975, 1976, and 1980. These should provide some clue to the jobs which show opportunities in the future for persons with appropriate training.

Sincerely yours,

George J. Widman

George J. Widman, Director
Research and Analysis Division

Enc.

APPENDIX F

LETTER TO COMMUNITY COLLEGE PRESIDENTS

January 7, 1975

Dear

A previous letter dated July 9, 1974, informed you of a study McManis Associates, Inc., is conducting for the Maryland Advisory Council on Vocational-Technical Education (MACVTE). Part I of that study has been completed, and its findings indicate that there are some unmet vocational-technical education needs in Maryland. We have begun Part II of the study to determine what should be done to meet these needs.

George Silver has been kind enough to put me on the agenda for the February presidents' meeting to discuss this matter further with you. At that time I would like to focus on the alternatives that are available to meet Maryland's vocational-technical education needs. Among these alternatives are the following:

1. *Push new efforts for charge-back legislation.*

2. *Designate one or more community colleges as vocational-technical residential centers; broaden their programs and open them to all state residents at the same tuition rate.*

3. *Designate certain programs in certain community colleges as state programs; subsidize these and open them to all state residents at the same tuition rate.*

4. *Create a new state technical college to house new programs and "one-of-a-kind" programs.*

5. *Create a new state residential community college and open it to all state residents at one low tuition rate.*

- Continued -

6. *Create one or more residential vocational-technical high schools which would serve adults as well as high school students.*

7. *Designate a current state college as a residential technical college and have it develop a full range of one- to four-year programs in the vocational-technical area.*

8. *Develop a new college within the University of Maryland to become a residential vocational-technical school.*

There are other alternatives and some combinations of the above which are possible options. Please consider all these alternatives and tell me your thoughts on the matter at the February meeting.

I look forward to seeing you then. If for some reason you are unable to attend the meeting, please let me have your thoughts in writing.

Best wishes for the New Year.

Sincerely,

L. James Harvey, Ph.D.
Director, Education Division

LJH/hmw

APPENDIX G

POSSIBLE SOURCES OF FEDERAL FUNDS FOR VARIOUS ASPECTS OF THE RESIDENTIAL VOCATIONAL TECHNICAL FACILITIES AND PROGRAMS

POSSIBLE SOURCES OF FEDERAL FUNDS FOR VARIOUS ASPECTS OF THE RESIDENTIAL VOCATIONAL TECHNICAL FACILITIES AND PROGRAMS

Following are listed some of the federal grant programs which might apply to the funding of facilities, equipment, and/or operating costs for residential vocational technical programs. As was mentioned earlier, the Vocational Education Act (VEA) is currently being revised by Congress and will likely be passed in 1975 or 1976. This Act could well provide special funds for residential vocational technical education and/or increased funding for community college and post secondary vocational programs.

Listed below are some of the federal programs. The numbers before them are catalog numbers contained in the 1974 edition of the ***Federal Domestic Assistance Catalog***, which can be obtained from the Government Printing Office, 701 North Capitol Street, Washington, D. C.

U. S. DEPARTMENT OF AGRICULTURE

10.423 Community Facilities Assistance

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

13.378 Health professions teaching facilities - loan guarantees and interest subsidies
13.401 Adult education - special projects
13.495 Vocational education - cooperative education
13.499 Vocational education - special needs
13.501 Vocational education - work study
13.502 Vocational education - innovation
13.516 Supplementary educational centers and services - special programs and projects
13.519 Supplementary educational centers and services - guidance counseling and testing
13.746 Rehabilitation services - basic facilities support
13.763 Rehabilitation services and facilities - special projects

U. S. DEPARTMENT OF LABOR

17.232 Comprehensive employment and training programs, Appalachian Regional Commission (applicable to Allegany Community College only)
23.012 Appalachian vocational education facilities and operations
23.014 Appalachian housing site development
23.016 Appalachian vocational technical education demonstration grants

COASTAL PLAINS REGIONAL COMMISSION (Applicable only to the Eastern Shore area)

28.001 Coastal plains regional economic development

ACTION

No catalog number Public Law 92-318, Education Amendments of 1972 for Construction of Academic Facilities (Section 161)